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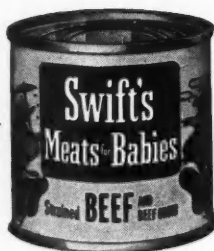
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No. 6

An Approach to Some Non-Clinical Responsibilities of Medicine

E. VINCENT ASKEY, M.D., *Los Angeles*

"Experience teaches us to be most on our guard to protect liberty when the government's purposes are beneficent."

(JUSTICE BRANDEIS, 1928)

FOR the past two decades, especially, the medical profession has been the object of attack by politicians and schemers. Their purposes are camouflaged expertly by artists in deceit. Good will toward all and beneficence for all are promised by the words of these demagogues. Their actual purposes and actual motives, however, are directed toward the ultimate complete socialization of the state and degradation of our present society. Doctors of Medicine long have known the utter falseness of promises made by professional agitators of these schemes. People, however, in great numbers have been unable to realize what is being done under the guise of government benefaction.

Doctors as a group for many generations have been interested only in the scientific advance of medicine and in the clinical application of this knowledge to their patients. Secure in the knowledge of a job well done, charitable toward the shortcomings of people, complacent in the face of unjustified insults, the medical profession has ignored to a great extent its duties in the non-clinical aspects of the practice of medicine.

Hazlitt has said, "The way to procure insults is to submit to them. A man meets with no more respect than he exacts."

Realization of these truths has come finally to our profession. We are resolved to submit to no more insults and to exact the respect that fair dealing with our profession demands. As a group the American medical profession has embarked on an educa-

tional campaign to preserve the liberties of American citizens which are now being endangered progressively by apparent government beneficence. The action of our profession has been supported almost unanimously by the individual doctors of America. A pitiful, few, perennial dissenters and their professional liberal friends have opposed our action.

In prosecuting our crusade there are several things that we must realize definitely and then make decision.

We must realize:

1. That there is a definite threat and actual emergent problem before us which must be conquered or submitted to.
2. We must decide whether we intend to conquer or whether we will submit.
3. If we decide we will conquer we must lay out our plan of battle.
4. Given a plan which we accept, we must unite, unswervingly, in following that plan. The Bible says, "He that is not with us is against us."
5. If we be united each must then make the furtherance of our cause his first interest. All else must be secondary even though important.

Practically all thinking people are agreed that there is a problem before us all. Right now, peculiarly, liberty and socialized medicine are rivals for the people's favor. Unfortunately, due to carefully conditioned mental reactions, liberty apparently is dear to most people only up to a certain point—where they desire something more than they do liberty.

Nearly all the medical profession has decided that it will not submit to the socialization of medicine and its sequelae. We are determined that this degradation of medical care shall not be foisted on the people by default. Preliminary plans of battle have

been drawn and successfully have been carried out, so far, to defeat for the moment, political maneuvers and laws that have been proposed. Our attack thus far has involved, however, mainly a defensive opposition and has been interpreted as a negative attitude by our enemies and by the people who should be our allies. Holding the fort and staving off the emergent attack has been most of our battle so far. True it is, that voluntary prepayment sickness insurance has been elevated as the standard to which we will rally, but the actual coordination and the successful operation of these plans to great enough an extent has not been accomplished as yet. A specific, inclusive, iron-clad plan with understandable features must be developed and presented and it must be done soon.

Such a plan must meet the actual needs for medical service; it must be available to all; it must provide adequate remuneration to the physician; it must be offered and available to everyone so that the costs shall be reasonable and the payment cushioned against hardship. Such a plan must have the hearty cooperation of the medical profession. Above all, such a plan must circumvent, once and for all, politicians and schemers who intend to force medical care under domination of government whether there be need or not.

I believe that the acceptance of this non-clinical responsibility in meeting the needs, and settling this problem, is the greatest duty and at the same time the greatest opportunity that we who are now representing the medical profession may ever be privileged to undertake.

It is said that many doctors feel that submission by free people to the dictatorship of socialism is inevitable; that it is predestined or written in the stars for medicine to capitulate to decay. I am reminded of the words of Shakespeare when I see men of medicine degenerating into astrologers:

*"At some time, men are the masters of their fates.
The fault, dear Brutus, lies not in our stars,
But in ourselves, that, we are underlings."*

With these factors in mind I have sought long to formulate in my own mind an answer that would approach satisfaction. It has been most difficult. However, I have arrived finally at the decision that the following plan, admittedly skeleton in form and subject to perfection, would be efficient and equitable.

As a preamble to my proposal, I would read to you again the official statement of policy of the American Medical Association:

"The American Medical Association reaffirms its belief in the application of the principle of medical care insurance on a voluntary basis. The American Medical Association has encouraged and assisted the development of voluntary prepayment plans. Coverage is now provided throughout the country and protection is being extended rapidly to an ever increasing proportion of our population.

"The American people now enjoy the highest level of health, the finest standards of scientific medical

care and the best quality of medical institutions thus far achieved by any major country of the world.

"The great accomplishments of American medicine are the result of development by a free profession working under a free system, unhampered by governmental control.

"The experience of all countries where government has seized control of medical care has been progressive deterioration of the standards of that care to the serious detriment of the sick and needy.

"The American medical profession is unalterably opposed to the institution of any system of medical care which would result in damage to the American public. Our carefully considered opinion is that any scheme of political medicine would be a catastrophe for the American people.

"Compulsory sickness insurance, notwithstanding misleading bureaucratic propaganda, is a variety of socialized medicine or state medicine and possesses the evils inherent in any politically controlled system. It is contrary to American tradition, and is the first and most dangerous step in the direction of complete state socialism. The American Medical Association rejects any such scheme as a method of the distribution of medical care. We are equally certain that when the people understand the facts they also will reject it with the same finality.

"On the basis of experience, we are convinced that voluntary medical care insurance, with the continued support of the American medical profession, can and will solve the economic problem of the distribution of medical care within the existing framework of private enterprise.

"It has been demonstrated that the voluntary method provides a better and less costly service and avoids the imposition of enormous taxation. The continuing purpose and determination of the American Medical Association is to maintain and improve the standards of medical care and to make that care available to all our people."

This should be well publicized and carried as a preamble to all of our endeavors so that there may be no doubt as to the motives or purposes and intentions activating the medical profession in any and all of our activities.

I present, therefore, the following plan:

Each individual Doctor of Medicine shall be asked to pledge allegiance to the following dictum:

I pledge:

A. Objection to government controlled, political or socialized medicine.

1. In discussion of this pledge several things are of utmost importance. First, there must be no misunderstanding as to what the socialists really intend to do. They know that a government plan cannot succeed without the support of the doctors. They intend to force the medical profession to cooperate. This is very evident in the Warren Bill (SB 157) wherein the last paragraph provides that no doctor may accept, receive or obtain any remuneration from most (about 87 per cent) of the population in return for medical services, except that paid by the state. This would make most private practice illegal

under penalty of revocation of license for unprofessional conduct. Practice under these conditions would be slave labor and no less.

2. As long as the people desire my services and make it legal for me to do practice without coercion I will gladly make my services available. I do not intend to practice medicine under slavery conditions.

(This will serve due notice that no one need misinterpret. Having defined what we will not do we must then say as strongly what we will do, in order that the people may know that their doctors will always care for their patients unless the patients themselves, under foolish leadership, make it illegal for the Doctors of Medicine to so do.)

General Washington said, "We must raise a standard to which the wise and honest may repair." Therefore, following the statement of policy of the American Medical Association in its last paragraph, "The continuing purpose and determination of the American Medical Association is to maintain and improve the standards of medical care and to make that care available to all the people," I further pledge:

B. I will confirm and cooperate in all voluntary insurance plans as approved officially by the medical profession as represented by the American Medical Association. Approved plans should embody the following principles in formation:

1. There shall be established standards of benefits to the public which shall meet actual needs for medical care.

2. Determination of fair and adequate remuneration for the furnishing of services, by hospitals and the medical profession in the providing of these medical care needs of the people, shall be made.

3. Thereupon, determination shall be made by competent actuaries as to the cost of premiums to insure the delivery of such services.

4. Insurance companies and all prepaid medical and hospital plans shall be urged to develop and furnish such policies, and cautioned not to fix premiums or charges below sound actuarial minimums. People must not be deluded any more by demagogic promises that lead them to expect good service for nothing. We must give them the best service and show them that it is at a reasonable cost and at a cost that they can afford.

5. Agreement by hospitals and the physicians to accept and abide by these contracts shall be obtained. (The public shall be assured that when the patient abides by his contract and when he accepts only the benefits of the contract and does not in addition pay more to the hospital, for added services, the physician will make no added charge. If the patient desires added services outside his contract with the hospital and pays for obtaining them, then added charges by the physician may be expected as part of the contract. This would leave the decision as to added costs entirely to the will of the patient.)

6. Liaison shall be established between the medical profession, the public, insurance carriers, labor

organizations, and employers, with the purpose of enlisting support for all honest and bona fide voluntary plans.

Employers shall be urged to adopt plans whereby they shall pay one-half the premium and the employee one-half. This would be a fixed factor, subject to a constant estimate, and deductible under income tax laws, and therefore the actual cost to the employer would be less than the apparent cost. It should be pointed out that this would be much less cost than under the proposed socialized medicine plans where fixed percentage deductions and many hidden taxes would be obligated on the employer for all of his employees.

Individuals, either employed or unemployed, would have the same benefits available to themselves by paying the total premium if they desired.

If government wishes to enter the picture, it may, as has already been suggested, pay the premiums of indigents or temporarily incapacitated people who are sick. For this principle of subsidization has been established already in other endeavors.

But the true function of government should be to educate the public in regard to: (1) The facilities for care, the type of voluntary plans, the actual benefits that are available to all. (2) People must be shown how to subscribe to these plans and taught to seek the benefits when needed. (3) People must be taught how to use these plans when they have them. (4) Children in our schools should be taught the truth, that sickness is not an abnormal expectation during their lifetime and that they should plan to meet these problems as they arise.

If the government would really tell the truth about these things and teach people how to care for themselves, there would be no need for the compulsion of socialism.

7. The American Medical Association shall continue its present organization, and shall continue its advancement of scientific medical care, and the ethical control of the practice of medicine, to which all its members are bound.

I realize that this proposed plan of meeting the problem which is now confronting the people and the medical profession is not all new. It is a summation of absolute needs. It is compelling to me in its logic as a way to solve a problem which must be and will be solved eventually.

Even now our Congress and our State Legislature are struggling. Under the urging of a President and a Governor, they are deciding what may well be the placing of the last straw on the camel's back. A broken back still is a serious matter even with the best medical care. Without medical assistance it most often is fatal.

Shall medicine sit by and see all that we believe in perish? Shall we submit or conquer in this test to which we are put?

The old crusaders had a motto we all know, "In hoc signo vinces." Today we too must raise our standard.

Now, the doctor must come out boldly in his advo-

cacy of what he believes. He must become a crusader and a salesman, if you will, of voluntary sickness insurance. He must guarantee to the patient certain services and he must see to it that his guarantee is fulfilled.

This plan preserves all the cherished liberties and prerogatives of both the public and the medical profession. It provides a voluntary plan that may be used by all, rich or poor. It preserves the patient-to-doctor relationship. It retains the incentive for the doctor to be the best doctor and to build his practice under his own capabilities. It preserves the American way of life and individual enterprise. It slaps in the face those who contend that free people under liberty cannot care for themselves and must become creatures of the state under a socialized dictatorship.

There are those of us who are fearful; they ask, "Can we be *certain* that this is the answer? Can we be *certain* that the government will allow us to do this? Can we be *certain* that it will work? Can we be *certain* that we should not bow our heads and accept now the stroke of the sword of communism?"

I answer in the words of George Eliot . . .

*"Nay, never falter: no great deed is done
By falterers who ask for certainty.
No good is certain, but the steadfast mind,
The undivided will seek the good:
'Tis that compels the elements, and wrings
A human music from the indifferent air.
The greatest gift the hero leaves his race
Is to have been a hero. Say we fail—
We feed the high tradition of the world,
And leave our spirit in other breasts."*



Surgical Treatment of Esophageal Hiatus Hernia by Transthoracic Herniotomy

A Preliminary Report

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SUMMARY

In view of the extensive operation required for repair of hiatus hernia by transthoracic or abdominal approach, herniotomy was done in three cases. Objectives were to (a) widen the esophageal hiatus, (b) remove the hernial sac, (c) cut the structures of the omentum and lesser curvature so that the stomach would lie flat in the chest, and (d) fix the stomach at the new level.

After the operation, all three patients were free of the symptoms of indigestion of which they had previously complained.

SMALL esophageal hiatus hernias are a common observation in routine gastro-intestinal series. These are usually asymptomatic. If symptoms are present, they are usually of such an indefinite nature that the clinician is reluctant to ascribe the symptoms to the lesion. Even when the hernia is large, the symptoms are vague. Harrington³ in a series of 404 cases, 287 of which were esophageal hiatus hernias, found the most common symptoms to be pain, abdominal distress, gaseous eructation, vomiting, dyspnea, hemorrhage, weakness, anemia and palpitations, in that order. He applied the term "masquerader" to this entity.

When the hernia is found by x-ray to be large and the patient has the above symptom complex, most clinicians will agree that the hernia is the responsible lesion. The symptoms are thought to be produced by traction on the peritoneal sac of the hernia and by progressive incarceration and obstruction of the stomach through the small opening in the diaphragm.

Repair of the hernia, either transthoracically or abdominally, is an operation of considerable magnitude. Even in Harrington's large experience, nine out of ten recurrences in his series were in the esophageal hiatus group. It occurred to the authors, after noting at first hand and in many cases reported in the literature how asymptomatic were patients with thoracic stomachs after esophageal resection, that it would be much simpler to treat an esophageal hiatus hernia by means of herniotomy than by various plastic repairs to the diaphragm.

From the surgical services of the Stanford University School of Medicine and the Letterman General Hospital, San Francisco.

Those who have had the greatest experience with esophageal resection have noted that patients with intrathoracic stomachs following resection of the esophagus have comparatively few complaints referable to the position of the stomach in the chest. Brewer and Dolley¹ state: "Actually, unless the patient has been informed as to the operative procedure used, in practically every instance he will not suspect that his stomach rests high in the thoracic cavity. For the presence of this organ in the posterior mediastinum and vertebral gutter produces no symptoms, formidable as it appears in the postoperative x-ray films." Sweet⁴ stated that these patients almost never experience any sensations which might make them aware of the presence of the stomach within the thorax. Occasionally gastric peristaltic sounds are heard. Such functional disturbances as have been noted, he believes, may be due to the delayed emptying time secondary to the vagotomy which must be done in resection for carcinoma. DeBakey and Ochsner² mentioned one patient who noted a "splash" when he swallowed.

When the stomach is brought through the diaphragm, it is anchored securely to the diaphragm and mediastinum. Furthermore, the opening in the diaphragm is usually of considerably greater width than the esophageal hiatus. In repair of a para-esophageal hiatus hernia, as with an inguinal hernia, an opening of just the proper size must be left so that the esophagus will not be constricted. Bringing the stomach into the chest avoids this difficulty.

It has been suggested that in some instances the hernia through the hiatus is secondary to the shortening of the esophagus which in itself is either congenital or secondary to esophagitis. The general experience with repairing hernias of this type by replacement into the abdomen has been quite unsatisfactory.

With these considerations in mind, (a) widening of the esophageal hiatus, (b) removal of the hernial sac, (c) cutting the structures of the omentum and lesser curvature until the stomach lies freely in the chest, and (d) fixation of the stomach at its new level, three patients have been so treated.

CASE REPORTS

CASE 1: A 42-year-old white male entered the hospital with complaint of "indigestion" of about one year's duration. He stated that the stomach filled with gas and seemed to go up in the chest. This occurred in attacks and was followed by a dull gnawing pain over the anterior chest wall on the left. The pain came on when the patient lay on his back and was

relieved by vomiting. It was also occasionally relieved by taking baking soda or by changing position. On several occasions, the patient had vomited "black material." He had not lost weight, had not lost appetite, and gave no history of vomiting blood or passing blood by rectum.

The patient also had a history of low back pain and pain down the right thigh beginning some four years previously. Physiotherapy was given at that time, with improvement after one month. There had been several recurrences of this type of pain.

The past history and family history were not remarkable. The patient had had typhoid fever 20 years ago and a right inguinal herniorrhaphy nine years ago.

Physical examination: The patient was stocky, 67 inches tall, weighing 175 pounds. The blood pressure was 140 mm. of mercury systolic and 90 mm. diastolic. There was an old right hernia scar. Measurement of the calf showed that the right calf was 0.5 inch less in circumference than the left.

Laboratory: Erythrocytes numbered 3,850,000, with hemoglobin 10.3 gm. per 100 cc., while leukocytes numbered 6,500. The urine was clear with no albumin, sugar or cells. Results of Wassermann and Kahn tests were negative. Plasma proteins totaled 6.8 gm. per 100 cc., with albumin 4.6 gm. and globulin 2.2 gm. per 100 cc.

X-ray examination of the lumbar spine was reported as follows: There was some scoliosis of the lumbar spine, convexity to the right, and the upper lumbar spine was normal. There was marked forward displacement of the fifth lumbar vertebra and the entire lumbar segment on the sacrum with roughening and sclerosis of the bony margins of the adjacent surfaces. There was also a break of the continuity of the posterior margin of the upper end of the sacrum which probably represented a fracture line permitting the forward displacement (spondylolisthesis).

A gastro-intestinal series (Figure 1) showed that there was an esophageal hiatus hernia with a narrow diaphragmatic opening, about one-third of the stomach being above the diaphragm.

An electrocardiogram was normal.

With the patient under intratracheal anesthesia, the left chest was opened through the bed of the seventh rib. The lung was retracted and the hernial sac with its contents easily identified in the posterior mediastinum. The sac was opened and the stomach freed. The lesser curvature vessels were freed for the distance which the stomach lay above the diaphragm. The omentum was next cut off a corresponding distance on the greater curvature. The diaphragm was then opened so that the opening equalled the width of the stomach at this level. The excess peritoneum of the sac was then excised. Next the stomach was tacked to the diaphragm at this same level with interrupted silk sutures around its entire circumference. It was noted that the esophagus had shortened so that it still appeared normal in contour at this higher level.

The mediastinum was then closed, the lung re-expanded and the chest wall closed without drainage.

Postoperatively, the patient had considerable pain in the back ascribable to the spondylolisthesis. This pain subsided as soon as the patient felt well enough to walk on the fourth postoperative day. Three weeks later the erythrocyte count had increased to 4,550,000, with hemoglobin 14.4 gm. per 100 cc. The patient noted complete disappearance of all abdominal symptoms immediately postoperatively. When last observed two and a half months after the operation the patient was symptom free.

Figure 2 shows the position of the stomach postoperatively with the patient standing, and in the Trendelenburg position. The stomach was fixed to the diaphragm in the thorax with a wide opening through the diaphragm.

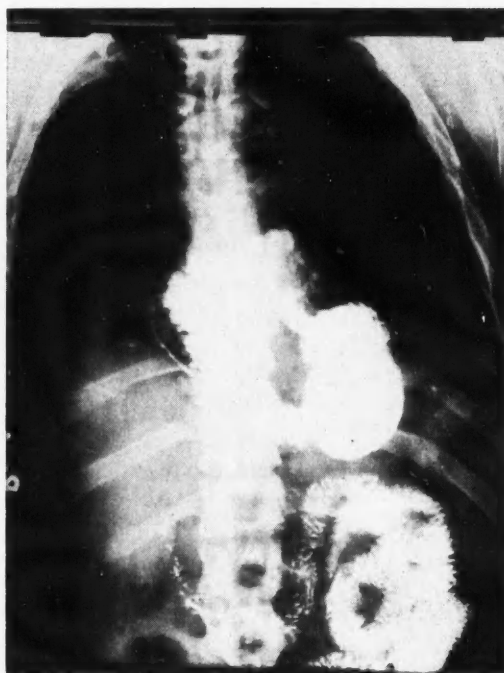


Figure 1.—Case 1 preoperatively showing narrow neck of hernia with about one-third of stomach in chest.



Figure 2.—Case 1 postoperative film in Trendelenburg position showing wide opening through the diaphragm.

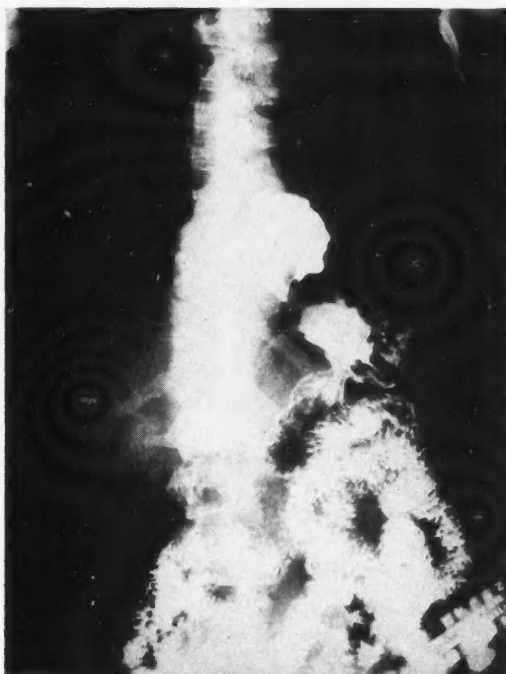


Figure 3.—Case 2 preoperative film.



Figure 4.—Case 2 postoperative film.

CASE 2: A woman 48 years of age complained of "indigestion" of many years' duration. Innumerable forms of medical therapy including diets had been tried without any dramatic relief. Relapses followed brief periods of improvement. There had never been any episodes of severe pain, and only occasional vomiting. The patient's weight had remained approximately stationary and there had been no episodes of hematemesis or melena.

General physical examination was not remarkable. Blood pressure was 160 mm. of mercury systolic and 95 mm. diastolic. Examination of the blood showed no evidence of anemia. A gastro-intestinal series (Figure 3) showed a para-esophageal hiatus hernia with a narrow ring and varying amounts of stomach, up to one-half, above the diaphragm.

An operation was performed in the manner described in the report of Case 1 with complete relief of symptoms. Figure 4 shows the gastro-intestinal series postoperatively.

CASE 3: A man 64 years of age who had been in vigorous health except for vague indigestion for many years, noted that about one year before entry the indigestion became worse and was more regularly associated with ingestion of food; occasionally, especially at night, he became nauseated and vomited. Vomiting brought immediate relief.

Physical examination revealed that the trachea was displaced to the right but nothing else of note. A roentgenogram of the chest showed that the mediastinum was retracted to the right. A gastro-intestinal series showed a diaphragmatic hernia with a constant mass of barium in a crater in the herniated portion of the stomach. The roentgenologist interpreted this (Figure 5) as a gastric ulcer.

An operation was performed in the manner previously described. A follow-up gastro-intestinal series (Figure 6) showed that the constant filling defect had disappeared. The chest plate (Figure 7) showed the diaphragm elevated on the left. This patient had a moderate amount of pain in the chest wall postoperatively but was completely relieved of the digestive symptoms. Follow-up six months later showed that



Figure 5.—Case 3 preoperative film showing fleck of barium constant on repeated examination. The hiatus in this instance is not narrow.



Figure 6.—Case 3, postoperative film showing that constant fleck has disappeared (this was coincident with the abatement of symptoms).

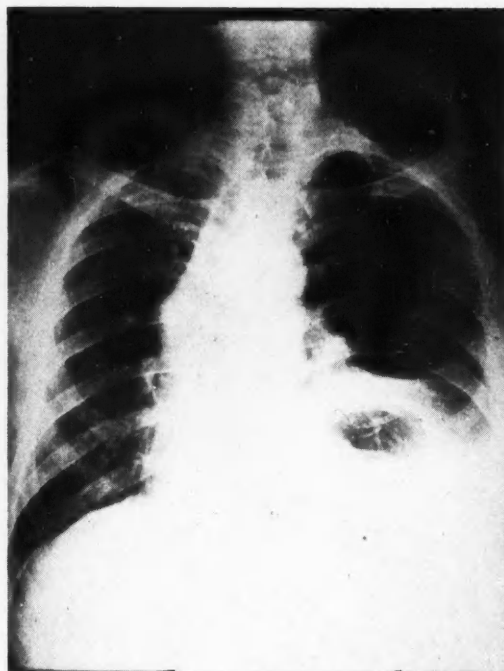


Figure 7.—Case 3 postoperative chest film. Distortion of the mediastinum has not changed.

the patient was symptom-free, and at that time he stated that he never really realized how much indigestion he had had until he had been relieved of the symptoms.

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The Diagnosis and Surgical Treatment of Tetralogies

MARY B. OLNEY, M.D., San Francisco

SUMMARY

Patients with congenital heart disease of the cyanotic type may be presumed to be candidates for surgical treatment if the examination of the heart reveals compatible findings, particularly murmurs characteristic of an interventricular septal defect, overriding aorta, and pulmonary stenosis; if the electrocardiogram shows right axis deviation; if the x-ray or fluoroscopic study demonstrates decreased pulmonary markings; if Diodrast injection shows right ventricular enlargement, a septal defect, overriding of the aorta, and small pulmonary arteries.

In some cases some of these criteria may be missing. If there are not definite contraindications, exploratory thoracotomy is indicated for patients with congenital heart disease causing cyanosis.

THE development of a technique for by-passing a stenotic pulmonary valve or a hypoplastic pulmonary artery and improving oxygenation of the blood^{2,3} has brought to the clinician the responsibility for identifying cases in which the technique can be applied. The occurrence of pulmonary stenosis alone as a cardiac lesion is rare. Its occurrence in combination with other lesions is common, most particularly in the tetralogy of Fallot with an interventricular septal defect, dextroposition of the aorta, and hypertrophy of the right ventricle (sometimes also an interauricular septal defect).

The study of autopsy material gave the first impetus to progress in the diagnosis of congenital heart lesions. The usual short life span of patients with cyanotic cardiac disease made material available in the study period of the observer and reliable criteria were established for common lesions. Extensive correlations between clinical and autopsy findings were made in 1,000 cases analyzed by Abbott.¹

Diagnosis was furthered by the determination of circulation times which contributed information on intracardiac shunts. The subjective end points are very difficult to elicit in small children and the methods therefore are not widely applicable.

Diagnosis has been advanced remarkably by the use of intravenous cardiography for identification of cardiac lesions. By serial x-ray studies at short intervals, Diodrast injected into the left antecubital vein is followed through the heart.^{5,6,7} The Diodrast

may outline venous anomalies en route to the heart. The Diodrast is under pressure and will pass from the right to the left auricle through an interauricular septal defect. If the Diodrast passes from the right auricle to the right ventricle, then simultaneously to the pulmonary artery and aorta, an overriding or transposition of the aorta is demonstrated. Diodrast outlining the pulmonary vessels may show them to be oversized as in the Eisenmenger complex or undersized as in the tetralogy of Fallot. The pressure of injection diminishes with time and dilution and Diodrast does not pass from the right to the left ventricle to demonstrate a septal defect. The Diodrast may return to the left heart from the lungs and pass from the left to the right side of the heart through the defect. This passage of Diodrast is referred to as refilling of the right heart. Diodrast in the aorta may demonstrate hypoplasia or coarctation of the vessel. Diodrast which passes from the aorta into the pulmonary artery through a patent ductus causes refilling of the left side of the heart. Dilution of the medium is so great at this stage that judging densities in films is difficult and the evidence for a patent ductus becomes largely presumptive. If a ductus is a possible compensatory lesion for a pulmonary atresia the lesions should be diagnosed by venous catheterization⁴ or by retrograde aortography.

Following is a review of 20 cases of congenital heart disease of cyanotic type. In 15 of the cases the clinical diagnosis of tetralogy of Fallot was proven surgically (Group I). In five cases in which clinical diagnosis was questionable, operation disclosed that tetralogy was not present (Group II).

REVIEW OF CASES

In only two cases of the series was there a family history of congenital heart disease. In one of the cases a macerated twin was delivered with the baby. In one case there was maternal bleeding for the first three months of pregnancy.

The time of appearance of cyanosis varied from birth to 3½ years. There was the same wide variation in the time of observation of the murmur. The delay in appearance of cyanosis or in the development of a murmur may be the result of inexpert observation or an increase in venous arterial shunt with increase in peripheral load because of body growth, or it may be the result of closure of a ductus.

Difficulty in feeding, which was noted in five cases, seemed to be partly from dyspnea which interfered with the effort of taking food and partly from passive congestion which interfered with digestion. Constipation seemed to be correlated with the

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feeding difficulty. In view of parents' amazement at postoperative appetite in all surviving patients, it is noteworthy that difficulty in feeding was a preoperative complaint in only five cases. The postoperative increase in activity contributed to the increase in appetite.

Syncopal attacks occurred in one child in warm weather, in one child without any expenditure of effort and in eight others when their activity exceeded the limits of their oxygenation. In two cases the syncopal attacks were associated with convulsions. In neither of these cases has there been syncope or convulsions postoperatively. In four cases there was complaint of great distress in warm weather, possibly because of increased peripheral load with vasodilatation.

The deciduous dentition (Table 2) was noted in these cases because of interest in the marked contrast between poor deciduous dentition and good permanent dentition.

A precordial bulge was present in nine cases. In all except one case it was associated with cardiac enlargement. There was no cardiac enlargement in six of the patients with tetralogy. The enlargement was to the left in six cases, to the left and right in

two cases, and to the right in one case. A basal thrill was present in six cases.

The murmurs were interpreted as follows: The systolic murmur in the left fourth interspace with or without a thrill was called the murmur of an inter-ventricular septal defect. From the experience with Diodrast study on a patient with a systolic murmur in the left third interspace in which overriding of the aorta was the only lesion,⁵ the systolic murmur in the left third interspace was called the murmur of an overriding aorta. There were no cases in which there was absence of femoral pulsations to introduce the possibility of coarctation. The systolic murmur in the left second interspace with or without a second sound was called the murmur of pulmonary stenosis. The pulmonary second sound was present in 12 of 15 patients with tetralogy and was greater than the aortic second sound in three cases. This finding is contrary to general understanding. In the two seven-year-old patients, in one eight years old and in one 11 years old, all three murmurs could be distinguished. In smaller patients, so small that the stethoscope covered a large proportion of the cardiac area, only two murmurs could be distinguished, and in one child only one murmur could be distinguished.

TABLE 1.—Salient Points in History of Cyanotic Heart Patients

Case No.	Age	Family History	Maternal Illness, First Trimester	Appearance Cyanosis	Appearance Murmur	Feeding Difficulty	Constipation	Retardation of Development	Recurrent Respiratory Infections	Limitation of Activity	Syncopal Attacks	Convulsions	Distress with Extremes of Temperature	X-ray Trt. for Thymus
1.	16 mo.	.....	.....	3 days	5 days	++	+	+	.....	++	++	.....	.....	.....
2.	17 mo.	+	.....	8 mo.	Birth	.....	.....	.....	.....	++	++	.....	+	+
3.	19 mo.	+	.....	8 mo.	9 mo.	+	+	+	.....	+	.....	.....	.....	.....
4.	18 mo.	.....	.....	6 wk.	5 mo.	.....	.....	.....	+	++	++	+	+	+
5.	22 mo.	.....	.....	6 wk.	5 mo.	+	+	+	.....	+	+	+	.....	.....
6.	3 7/12 yrs.	.....	.....	Bir h	Birth	.....	.....	+	.....	+	.....	.....	+	.....
7.	3 8/12 yrs.	.....	.....	8 mo.	9 mo.	.....	.....	.....	.....	+	.....	.....	.....	.....
8.	2 9/12 yrs.	.....	.....	2 mo.	2 mo.	+	.....	+	.....	++	+	.....	.....	.....
9.	2 11/12 yrs.	.....	.....	4 mo.	4 mo.	.....	.....	.....	.....	++	+	.....	.....	.....
10.	4 3/12 yrs.	.....	.....	6 mo.	2 yr.	.....	+	.....	.....	+	±	.....	.....	.....
11.	4 8/12 yrs.	.....	.....	3½ yr.	3½ yr.	.....	+	+	+	++	.....	.....	.....	.....
12.	7 10/12 yrs.	.....	.....	Birth	Birth	.....	.....	+	.....	++	+	.....	.....	.....
13.	8 yrs.	.....	+	Birth	Birth	.....	.....	.....	+	+	.....	.....	.....	.....
14.	7 9/12 yrs.	.....	.....	Birth	Birth	++	.....	+	.....	++	.....	.....	.....	.....
15.	11 yrs.	.....	.....	Birth	?	?	.....	+	.....	++	.....	.....	.....	.....
16.	9 mos.	.....	.....	6 wks.	6 wks.	.....	.....	+	.....	+	+	.....	.....	.....
17.	2 4/12 yrs.	.....	.....	Birth	Birth	.....	.....	+	.....	++	.....	.....	.....	.....
18.	2 2/12 yrs.	.....	.....	Birth	Birth	.....	.....	+	.....	++	.....	.....	.....	.....
19.	4 7/12 yrs.	.....	.....	Birth	Birth	.....	.....	+	.....	++	.....	.....	.....	.....
20.	12 4/12 yrs.	.....	.....	7 days	7 days	.....	.....	.....	.....	++	+	.....	+	.....

In small patients accurate blood pressure determinations are difficult to obtain. The range of pulse pressures was from 22 to 45 mm. of mercury.

In only one case was there a manifest associated congenital anomaly, a hypospadias. No associated anomaly was discovered at autopsy of the patient with tetralogy or at autopsy in the three cases in which tetralogy was not present.

There was no correlation demonstrated between the higher hemoglobin, red blood cell, and packed cell volume determinations and the syncopal attacks.

The electrocardiogram showed right axis deviation in all the patients with tetralogy. The one death in the 15 cases reported was that of a patient with a right bundle branch block. Of six patients who died in the course of investigation of cyanotic heart disease, four had right bundle branch block. One patient died with induction of anesthesia for Diodrast study, one died with injection of Diodrast,

one during transplantation operation (Case 18 in Table 4) and one shortly after operation (Case 11 in Table 4).

The x-ray and fluoroscopic examinations revealed no characteristic configuration for a tetralogy. In five cases the heart appeared normal. The examinations were useful, however, in denoting the position of the aorta. The clinical and x-ray determination of enlargement coincided with moderate accuracy.

The Diodrast examination demonstrated an overriding aorta in 12 of 15 cases of tetralogy and in the two cases of Eisenmenger complex. The pulmonary arteries were judged as being small in five patients with tetralogies by x-ray examination and in seven by Diodrast examination. In two cases in which the Diodrast study indicated the pulmonary arteries were large, they proved small (Cases 12 and 14). In neither of the two cases of Eisenmenger complex was the Diodrast study diagnostic for en-

TABLE 2.—Salient Physical Findings in Cyanotic Heart Patients.

	Degree Cyanosis	Deciduous Teeth	Development	Precordial Bulge	Clubbing	Area Cardiac Dullness	Murmur	P ₂	BP	Associated Anomalies
1.	++	Poor	.....	+	Thrill at base. Not enlarged.	M _S L. iv, i.s. M _S L. ii, i.s.	.....	.....	.....
2.	+	Fair	+	+	No thrill. Enl. l. & r.	M _S L. ii, i.s.	±	arm 100/70 leg 140/100	.....
3.	++	Poor	Good	.....	+	Enl. l. & r.	M _S L. ii, iii, i.s.	+	.....	.....
4.	+	Fair	.....	+	No enl. Fine S. thrill at base	M _S L. ii, iv, i.s.	A ₂	98/70	.....
5.	++	Good	.....	+	Enl. to left. Basal thrill.	M _S L. ii, iii	A ₂	.....	.....
6.	++	Poor	.....	++	Enl. to left.	M _S L. iii, iv, i.s.	+	100/80	.....
7.	+	Good	.....	+	Thrill L. iii. No enl.	M _S L. ii, iv	+	120/80	.....
8.	++	Fair	Fair	++	++	Enl. to left.	M _S L. iii, i.s.	+	115/?	+
9.	+	Good	.....	++	Enl. left. Thrill at base.	M _S L. ii, iii, i.s.	+	100/68	.....
10.	++	Fair	+	++	Normal. Short thrill, L. ii, i.s.	M _S L. ii, iv, i.s.	+	105/60	.....
11.	++	Poor	Fair	+	++	Enl. to left.	M _S L. ii, iii, i.s.	+	110/80	.....
12.	++	Poor	Fair	.....	++	Enl. to rt.	M _S L. ii, iii, iv, i.s.	A ₂	110/70	.....
13.	+++	Poor	Fair	+	++	To A.A.L. left.	M _S L. ii, iv, v	=A ₂	108/86	.....
14.	++	Poor	Poor	.....	++	Not enl.	M _S R. i, ii, iii	.....	110/78	.....
15.	++	Poor	Poor	+	++	Normal.	M _S L. ii, iii, iv	+	110/80	.....
16.	+++	None	Poor	.....	++	Not enl.	None	absent	.....	.....
17.	++	Fair	Poor	Sternal ++	.....	A.A.L. left.	M _S L. iv	absent	.....	.....
18.	++	Poor	Poor	Rt. +	++	Enl. l. & r. Thrill L. iii.	.....	.....	70/50	.....
19.	++	Poor	Fair	+	++	Sl. enl.	M _S L. ii	A ₂	.....	.....
20.	+	Poor	Good	.....	+	Not enl.	M _S L. iii, ii	A ₂	110/80	.....

Abbreviations: P₂ refers to second pulmonary sound. BP refers to blood pressure. RBC refers to erythrocytes of the blood. PCV refers to packed cell volume (erythrocytes of blood).

TABLE 3.—*Salient Laboratory Findings in Cyanotic Heart Patients.*

	Hgb. %*		RCB		PCV		Ecg.	X-ray and Fluoroscopy	Diodrast
	Preop.	Postop.	Preop.	Postop.	Preop.	Postop.			
1.	85	80	5.50	6.90	....	48	PR 0.11, Depr. ST1, 2, Rt. axis dev.	Globular ht., marked enl. in l. vent. segment.	Overriding aorta, I-V septal defect, small P.A.
2.	118	103	4.20	5.16	51	48	PR 0.12, QRS 0.06, Rt. ax. dev.	Enl. to left and rt. Feeble pulse left PA.	Overriding aorta. Rt. heart > left.
3.	178	104	8.12	5.89	71	62	PR 0.12, QRS 0.07, Rt. ax. dev.	No pulm. puls. Rt. sided aorta. Contour normal.	Overriding aorta, rt. sided arch, no cross chamber filling.
4.	106	.....	5.30	.....	48	....	PR 0.16, QRS 0.05, Mod. rt. axis dev.	Rt. sided aorta. Hrt. not enlarged.	Overriding aorta. Pulm. stenosis.
5.	118	116	5.96	6.25	49	45	PR 0.15, QRS 0.08, Rt. axis dev.	Vascular markings reduced. Rt. sided aorta.	Left PA < rt. Overriding?
6.	170	124	7.45	5.81	....	52	PR 0.14, QRS 0.07, P ₂ tall, Rt. ax. dev.	Left cardiac bulge. No hilar pulsations.	Rt. side large. No cross chamber mixing.
7.	121	88	6.27	4.25	50	38	PR 0.15, QRS 0.07, Rt. ax. dev.	Size upper limit of normal.	Overriding aorta, pulm. stenosis. No intracardiac shunt, PDA?
8.	158	100	7.43	5.09	66	53	PR 0.15, QRS 0.07, Marked rt. ax. dev.	Rt. vent. mod. prominent.	Rt. Ventricular enl. Overriding aorta. Small P.V.
9.	154	90	7.40	5.82	57	50	PR 0.14, QRS 0.08, Rt. ax. dev.	Sl. enl. aortic arch on left.	Overriding aorta, no intracardiac shunt.
10.	160	110	6.0	5.57	76	53	PR 0.12, QRS 0.08, Marked rt. ax. dev.	Minimal enlargement. Left sided aorta.	Overriding aorta. Pulm. vessels light.
11.	142	.....	11.0	.....	82	....	Rt. bundle branch block, PRO 12, QRS 0.08.	Normal.	.....
12.	128	108	7.10	.....	55	49	PR 0.12, QRS 0.07, Rt. axis dev.	Pulm. markings decreased on left. Rt. sided aorta.	Overriding aorta. Well filled PA.
13.	176	122	10.0	6.60	....	52	PR 0.15, QRS 0.12, Tall P ₂ , Notched P ₂ .	Congenital hrt. Rt. sided aorta?	Lrg. intracardiac shunt. Prob. I-A, ? I-V defect.
14.	131	104	7.98	6.16	61	48	.....	Rt. side enlarged.	No shunt. PA appear large.
15.	126	99	8.90	4.67	56	39	PR 0.16, QRS 0.09, Depressed ST2, 3, Rt. ax. dev.	Normal.	Lrg. rt. hrt., overriding aorta. PA small.
16.	140	.....	7.12	.....	62	....	PR 0.12, QRS 0.07, Rt. ax. dev.	Prominent left border and pulm. conus. Sl. enlarged.	Rt. & L. sup. vena cava; L. into rt. auricle & aorta. Lt. ht. not outlined.
17.	174	144	9.10	9.08	69	....	PR 0.12, QRS 0.08, Deep S1, 2, 3, Rt. ax. dev.	Prom. rounded left lower border; rt. pulm. vessel enlarged.	Overriding aorta; no cross chamber mixing.
18.	110	.....	7.26	.....	68	....	PR 0.12, QRS 0.12, Depressed ST1, Elev. ST2, 3, Rt. BBB.	Situs inversus of abd. viscera; aortic arch on left.	.....
19.	148	.....	7.40	.....	72	....	PR 0.13, QRS 0.08, Broad P ₂ , 3, P waves, marked rt. ax. dev.	Stomach on left; hrt. Abnorm. on rt. Small pulm. vessels.	Systemic blood into left hrt., floods both ventricles.
20.	138	140	5.70	6.57	64	60	.....	Normal.	Overriding aorta. I-A septal defect.

*14.5 gm. equals 100 per cent.

largement of the pulmonary arteries. An intracardiac shunt was demonstrated in two cases of tetralogy and in one of Eisenmenger complex. Diodrast demonstrated successfully the right auricle and aorta in the complete transposition and the interchamber mixing in the bilocular heart.

The results of anastomosis were most gratifying. The function was excellent in nine of fifteen cases. In the four cases in which the result was rated as good, the estimate was difficult to make because the remaining cardiac lesions produced cyanosis. In the case in which the result was rated as fair, the mental retardation of the patient possibly limits activity. The child's parents, however, feel that he has made definite improvement.

The youngest child to have anastomosis was 16 months. It is not generally accepted that a child under that age would have structures of sufficient size to make the anastomosis technically feasible. It will be necessary to extend the technique to a younger group to save patients who die from closure of the ductus. The advisability of operation in the early age groups is emphasized by the invalidism of the oldest patient in the group and by the freedom from symptoms and rapid development of the younger patients who were operated upon.

The cases in Group II merit some analysis. The infant (Case 16) was thought, clinically, to have a complete transposition of the great vessels, a condition in which the life expectancy is about five

TABLE 4.—Type of Anastomosis and Results.

Operation	Clinical	Physical	Result
1. Left subclavian to left pulmonary.	Eating well. Walking.	Blowing M_s over base.	Excellent.
2. Left subclavian to left pulmonary.	Gaining well. Active.	$M_s + D$ BP 80/60.	Excellent.
3. Left subclavian to left pulmonary.	Eating well. Walking.	Blowing M_s over base.	Excellent.
4. Left subclavian to left pulmonary.	No syncope. Walking.	$M_s + D$.	Excellent.
5. Left common carotid to left ramus PA.	Eating well.	$M_s + D$.	Excellent.
6. Left subclavian to left PA.	No cyanosis.	$M_s + D$.	Good.
7. Rt. subclavian to rt. PA.	Appetite good. Plays hard.	$M_s + B$ BP 80/30.	Excellent.
8. Innominate artery to rt. PA.	Tireless.	Cyanosis + $M_s + D$.	Good.
9. Rt. subclavian to rt. PA.	Good gain.	Cyanosis + $M_s + D$.	Good.
10. Rt. subclavian to rt. PA.	No fatigue. Good reserve.	$M_s + D$.	Excellent.
11. Rt. common carotid to rt. PA.	Died postoperatively.	Pulmonary infundibular stenosis. I.V. septal defect. Rt. ventricular hypertrophy.	Satisfactory surgical anastomosis.
12. Left subclavian to left PA.	Never tires.	Less clubbing. Cyanosis + $M_s + D$.	Excellent.
13. Rt. subclavian to rt. PA.	More active.	Cyanosis + $M_s + D$.	Good.
14. Left subclavian to left PA.	More active.	Cyanosis + $M_s + D$.	Fair.
15. Rt. common carotid to rt. PA.	Active without dyspnea.	$M_s + D$.	Excellent.
16. Exploratory.	Anastomosis attempted because terminus expected.	Complete transposition. Patent ductus. I.V. septal defect.	No anastomosis. Died postoperatively.
17. Exploratory.	Anastomosis attempted.	Eisenmenger complex.	No anastomosis.
18. None.	Anastomosis not attempted.	Common auricle. Pulmonary stenosis. Aplastic rt. ventricle, hypertrophied. Overriding aorta.	Died after Diodrast.
19. Rt. subclavian to rt. PA.	Anastomosis attempted.	Dextrocardia. Functionally bilocular hrt. Large interauricular septal defect. Aplasia rt. ventricle. Pulmonary atresia. Persistent ductus.	Died on table.
20. Left subclavian to left pulmonary.	Anastomosis done. Some improvement.	No continuous murmur. Eisenmenger complex.	Essentially unchanged.

months. There were no murmurs. The electrocardiogram was not diagnostic. The Diodrast study was confirmatory. Because murmurs are not always present from birth and because of the prognosis, an exploratory operation was performed. Placing a clamp on the pulmonary artery stopped the heart-beat. No surgical procedure was possible. The surgeon felt that it would be possible technically to do an anastomosis at this age should the circumstances warrant.

Case 17 was thought clinically to be one of Eisenmenger complex, and the diagnosis was proven by exploratory operation. The only essential variation between the findings in this case and in the cases of tetralogy was the finding of enlarged right pulmonary vessels by fluoroscopic and x-ray study.

Investigation was considered hazardous in Case 18 because of an incomplete situs inversus and right bundle branch block. The patient had functionally a bilocular heart which was thrown into decompensation by the Diodrast injection.

There was questionable risk for operation in Case 19 because of dextrocardia. The patient, had he lived, would have been helped by the right subclavian anastomosis, because the only blood going into his lungs was going via a ductus arteriosus which was closing by endarteritis. Death was caused by a thrombus which lodged in the narrowed ductus and interrupted circulation.

In Case 20 the patient was considered a doubtful candidate for operation because of failure to demonstrate stenosis of the pulmonary vessels. Inasmuch as dilatation of the vessels could not be demonstrated and the limitation of activity was so great, exploratory operation was decided upon. The clinical improvement has been subjectively fair but objectively unfounded.

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Sickle Cell Disease Simulating Advanced Rheumatoid Arthritis

Report of a Case

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IT has long been recognized that sickle cell disease may present itself in many diverse and variable forms. The case discussed in this paper is unusual because the history, physical findings, and roentgen features closely simulated those of advanced rheumatoid disease.

Sickle cell anemia, first described by Herrick¹⁵ in 1910, is a hereditary and familial form of chronic hemolytic anemia. Although this entity once was thought to be confined to the Negro race, cases have been reported in white families, most of whom were of Mediterranean stock.^{6, 7, 11} X-ray findings of the skulls in Mayan Indians were suggestive of sickle cell disease.²⁰ It has also been described in Mexicans. The sickle cell trait was found in 7.3 per cent of a series of over eight thousand Negroes,⁹ with a higher percentage in South African natives.¹⁰

The trait is transmitted in accord with the Mendelian law of heredity as a dominant characteristic.¹⁰ One out of 40 American Negroes with the sickling trait showed evidence of sickle cell anemia.⁹ The disease is frequently found in young people, and cases have been reported in infants as young as five months.

The symptomatology is extremely variable and the symptoms may closely simulate those of many other diseases. Between acute episodes, there may be relatively few symptoms. Then exacerbations with symptoms of sudden anemia, severe abdominal pains, or acute rheumatic fever with migrating polyarthritis have frequently been reported. The heart is often affected;¹⁰ cardiac enlargement was reported in over 80 per cent of a series of 28 cases.¹³ Cardiac abnormalities which may occur include arrhythmias, systolic murmur and thrill, prominent pulmonary conus, or even a picture simulating acute coronary occlusion.³⁰ Occasional cases with renal involvement, manifested by hematuria, have been reported.¹

The picture of sickle cell disease presenting itself as an acute abdominal crisis is well recognized. However, cases have also been reported in which this process has progressed to shock and subsequently to death.²⁶ The presence of punched-out ulcers on the anterior aspect of the lower legs in a

Negro patient should always arouse suspicion of this disease as an etiologic factor.

Characteristic physical findings in persons with chronic sickle cell anemia are moderate underweight, a short trunk, long extremities, narrow hips, narrow feet, dorsal kyphosis, and atrophic genitalia.²³ Physical findings during acute crises may include fever, splenic friction rub, joint swelling, bone tenderness, jaundice, and, in about 15 per cent of cases, splenomegaly.²⁵ The presence of gallstones may occasionally be the only findings to suggest blood dyscrasia in a young individual. Neurological signs are frequent;¹⁷ 16 per cent of the patients in one series were mentally deficient.¹¹

Roentgenologic abnormalities are frequently found, with the principal changes occurring in the skull, vertebrae, tibiae, and fibulae. In 85 per cent of a series of 48 cases there were abnormalities in the skull, and in 57 per cent there were changes in the long bones.¹³ The characteristic findings are: Radial striations in the skull produced by trabecular striations which radiate outward perpendicular to the inner table; osteoporosis of the skull and vertebrae; cortical thickening; new bone formation within the medullary cavity, and patchy irregularities in the density and pattern of the bone structure.¹⁰ Moore²¹ noted thickening of the cortex and narrowing of the medullary cavity in adults, while Vogt²⁷ found thinning of the cortex in infants and children. Brendau³ found "decreased density and splotching of the medullary portions" in the tibiae and fibulae of a 22-year-old patient. Grinnan¹² described changes in a child confined to the metacarpal bones. The changes were striations. Danford and co-workers⁸ described acute changes in a Negro infant consisting of thickening of the periosteum along the shaft, and irregular areas of decreased density at the distal ends of the fourth right metacarpal and second left metacarpal. They also found involvement of the middle and proximal portions of the phalanges of the fourth left and second right fingers with coarse trabeculation at the proximal ends, a band of decreased density at the proximal end involving medullary bone, cortex, and periosteum, and also several punched-out areas within the thickened periosteum, along the shafts. The bony changes appeared and disappeared within one month. Anemia and marked sickling were present during this period of time.

The laboratory findings in sickle cell disease vary somewhat, depending upon the stage of the disease,

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the degree of oxygen saturation, which influences the size of the red cells, the presence of an acute exacerbation, and the presence or absence of anemia together with the sickling trait. Stained smears show most of the cells to be round or oval, with many nucleated erythrocytes, an increased number of reticulocytes, and a few elongated cells. Leukocytosis is usually present. Urinary urobilinogen is increased due to increased hemolysis. The bone marrow frequently shows many nucleated erythrocytes. The sedimentation rate is characteristically slow⁵ due to the lack of rouleau formation. Burch^{28, 29} has described the method of comparing the rate of sedimentation of blood collected from a vein after stasis to that of the same sample after aeration; a change in the sedimentation rate of at least 20 mm. in 15 to 60 minutes is found. A number of tests have been described to detect the presence of the sickling trait and these have recently been reviewed by Singer and Robin.²⁴ In addition, they described a new technique involving the incubation of suspected blood with a bacterial culture of an organism utilizing oxygen; a positive reaction for both the sickle cell trait and sickle cell anemia was obtained within 15 minutes by this method.

If sickle cell anemia is present without anemia, a stained smear may be normal, erythrocyte regeneration may not be shown, and in a sealed wet preparation the sickling phenomenon may occur more slowly.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis must include rheumatic fever, other diseases producing skin ulceration, acute abdominal diseases such as mesenteric thrombosis, renal neoplasms causing hematuria, other hemolytic diseases, and rheumatic myocarditis. The differentiation of sickle cell anemia cardiopathy from rheumatic heart disease is based on the following criteria:¹⁴ No response of pain in the joints to salicylates, the presence of jaundice, splenomegaly and/or lymphadenopathy, anemia, reticulocytosis, slow sedimentation rate, presence of sickling, diffuse cardiac enlargement, and characteristic roentgen changes in the bones. The authors have been unable to find in the literature any previous mention of sickle cell disease simulating advanced rheumatoid arthritis.

PROGNOSIS

The prognosis in sickle cell anemia is generally considered to be poor due to the many complications which may arise. The presence of the sickle cell trait was not felt by Diggs and Ahmann⁹ to be clinically significant for the following reasons: They felt that it was compatible with long life; they found the incidence in hospital patients to be equal to that in healthy individuals; and they stated that leg ulcers occurred as frequently in normal persons as in those with the sickling trait. However, Bauer² felt that there might be the same complications with the sickling trait alone as with sickle cell anemia.

TREATMENT

There is no accepted therapy for this condition at present. Residence in localities at high altitudes

is contraindicated because of the increased sickling tendency at low oxygen saturation levels. The administration of oxygen over long periods of time has been attempted in an effort to decrease the sickling tendency of the blood, and while sickling decreased considerably during the period of therapy, it returned to the former rate after cessation of oxygen administration. Murphy and Shapiro²² postulated that an alteration in the blood coagulability occurs during crises, and they therefore administered anticoagulants in an attempt to prevent thrombus formation. Their efforts were unsuccessful because of the rapid rate at which sickling occurs during a crisis as compared to the relatively slower speed of action of present-day anticoagulants.

CASE REPORT

A 26-year-old Negro male entered the hospital on May 3, 1948, with a history, dating from 1942, of pain and stiffness in the back, left hip, and both knees. He first began having severe back pain associated with low-grade fever in 1942. This was not associated with any other symptoms except moderate weakness, and the symptoms subsided after a few weeks of bed rest. Three months later, swelling and pain in both knees and pain in the left hip developed. The patient had had a low grade fever and marked weakness with this episode, and there was no response to sulfonamide therapy. The painful swelling subsided after four to five weeks of rest. Six months later when the back pain recurred together with fever, a lumbar puncture was performed but no abnormalities were revealed. The patient was relatively asymptomatic between 1943 and 1945, and then began having pain and stiffness in the back and left hip. Extensive studies had been made in private hospitals, but no definite diagnosis had been made. A course of deep x-ray therapy to the back was given with no appreciable improvement. The patient continued to have pain in the hip and back, occasional bouts of low-grade fever, and progressive stiffness with limitation of motion in the left hip. He had lost 20 pounds of weight over a period of three years although there had been no marked anorexia. The past history was entirely negative for any type of arthritis or other rheumatic disease. The patient said that he had not had rheumatic fever, gonorrhea, urethritis, skin ulcers or episodes of acute abdominal pain. The family history was entirely negative for any type of arthritis or blood dyscrasia.

At the time of admittance to hospital, the temperature was 99.8° F., the pulse rate 100, and respirations 18 per minute. There was evidence of moderate loss of weight and malnutrition. Blood pressure was 130 mm. of mercury systolic and 90 diastolic. The heart was not enlarged but there was a soft, Grade I systolic murmur heard best in the second left interspace. The rhythm was regular and there were no other murmurs. The lungs and abdomen were entirely negative. There was some flattening of the normal lumbar curve with limitation of forward or backward bending. There was marked limitation of motion of the left hip, with 30 degrees range of motion in any direction and only minimal motion in external rotation. A moderate degree of atrophy of the entire left leg was present with motor weakness and hypoaffective deep reflexes. No other joint abnormalities were noted.

Results of urinalysis and studies of the blood cell content were within normal limits, and a Wassermann test for syphilis was negative. The blood sedimentation rate in repeated tests averaged 2 mm. in one hour. Uric acid levels ranged from 1.7 to 2 mg. per 100 cc., blood calcium was 9.6 mg. per 100 cc., phosphorus was 3.9 mg. per 100 cc., acid phos-

phatase 1.5 units and alkaline phosphatase 3.1 units. Agglutination studies for undulant fever were negative. Results of liver function studies, including total proteins, prothrombin time, cephalin flocculation, thymol turbidity, and urinary urobilinogen, were normal. Examination of sternal marrow revealed a normoblastic hyperplasia. Repeated tests for blood sickling revealed 20 per cent sickling within 3 to 4 hours and 90 to 95 per cent sickling within 24 hours (Figure 1). Other members of the family were not available for similar blood studies. Erythrocyte counts varied between 5.0 and 5.2 million, hemoglobin values between 92 and 97 per cent of 15.6 gm., and leukocyte counts between 6,000 and 9,500; differential smears were consistently normal. Bleeding and coagulation times were normal.

Radiograms (Figure 2) of both humeri and femori revealed extensive osteoporosis, thickening of the endosteum, narrowing of the medullary canal, flattening with mottled destruction of both femoral heads, to a greater extent on the right side, and narrowing of the hip space with sclerosis and subarticular lytic areas. There were irregular erosion and absorption of a large portion of the articulating surface of the left femoral head together with extensive osteoporosis of the left hip joint. Radiographs of the lumbosacral spine, including the sacro-iliacs, revealed extensive osteoporosis together with fusion of both sacro-iliac joints. The apophyseal joints of the lumbar region showed articular sclerosis. Hypertrophic lipping between L-1 and 2 and minimal lipping of other lumbar vertebrae were present. The spine showed generalized osteoporosis with ballooning of the intervertebral spaces with some irregularity of the superior-inferior borders of the vertebrae. No calcification of the paraspinal ligaments was present. Radiographs of the knees revealed moderate osteoporosis. Radiographs of the skull and other joints were essentially normal except for osteoporosis in all the long bones. X-ray films of the chest were normal.

The patient was treated with physiotherapy and salicylates with slight improvement. During hospitalization, there was an episode, lasting six hours, of severe mid-abdominal pain with vomiting, and a blood smear at this time revealed a moderate degree of sickling.

DISCUSSION

No previous association in the literature has been found between sickle cell disease and chronic destructive arthritis. The authors have cited reported cases in which symptoms simulated those of acute rheumatic fever or acute infectious arthritis, and have also reviewed the changes in the skeleton in this condition, but even standard textbooks on arthritis, such as Comroe's, do not list sickle cell disease as a possible etiological factor in the production of chronic arthritis.

Kraft and Bartel¹⁹ reported a case of sickle cell anemia with recurrent joint swelling and leg ulcers together with extensive roentgenographically demonstrated bone changes. They described rib decalcification, coarse trabeculation of the clavicles, ballooning of the cervical discs with lipping and trabeculation of the thoracic bodies, trabeculation of the sacrum, osteoporosis of the skull with frontal hyperostosis, osteoporosis of the tibiae and fibulae, enlargement of the metatarsal heads and shafts with medullary widening and cortical thickening, and mushroom deformity of the femoral heads. They pointed out that advanced skeletal changes indicate chronicity but not necessarily severity of disease,

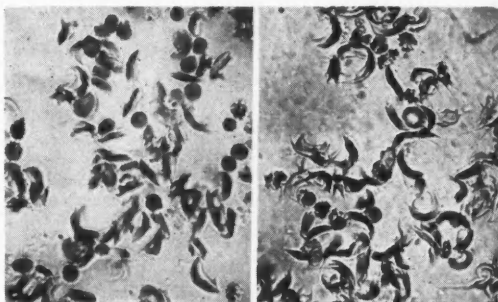


Figure 1.—Left, unstained wet preparation after three hours. Right, unstained wet preparation after 24 hours.

since normal skeletal findings may be associated with severe anemia.

The case reported is unusual both because of the bone and joint changes, and also because of the degree of bone involvement without an accompanying anemia. There can be little doubt that the patient has sickle cell disease and the bone changes which are found in association with this disease. The pathogenesis of the joint changes is subject to more controversy, however. The findings indicate osteoporosis, irregular bony destruction, narrowing of joint surfaces, and osteosclerosis in the involved joints, principally involving the hip joints. It is felt that this picture is the result of many episodes of hemolysis with subsequent clumping or agglutination of sickle cells resulting in the formation of thrombi in the vascular channels to these joints. The end result is, of course, numerous bone infarcts with ischemia and the well-recognized after-effects of bony destruction in an irregular pattern with repair by fibrosis. The association of fever and marked weakness with these episodes supports this hypothesis. The presence of typical bone changes in the areas surrounding the involved joints also tends to corroborate the diagnosis. The history of episodes of sudden weakness with joint changes in the past, plus the acute abdominal episode associated with sickling observed during hospitalization, indicates that the patient is subject to crises.

The differential diagnosis must include rheumatoid disease of the spine and hips. The sclerosis of the sacro-iliac joints, early changes in the apophyseal joints, presence of irregular low grade fever and some weight loss may all point in this direction. The changes in the hip joints are, however, not typical of rheumatoid disease; the bone changes are those of sickle cell disease; and the lack of response to deep roentgen therapy to the spine all militate against this diagnosis. Another possibility is the association of both diseases simultaneously, and this can hardly be disproven.

The possibility of the hip joint findings being the result of chronic granuloma was tentatively ruled out by the findings of normal chest x-rays, negative skin tests, absence of granulomatous lesions in other bones or parts of the body, absence in the past his-

tory of contact with or symptoms of one of the chronic granulomas, and absence of any skin abnormalities.

Osteochondritis of the hip joint was considered, but the onset of the disability within the past five years, absence of history of trauma, bilateral involvement, presence of numerous other abnormali-

ties, and absence of characteristic x-ray findings make this highly unlikely.

Other forms of arthritis such as chronic gouty arthritis were ruled out by history, roentgen findings, normal uric acid levels and absence of tophi, kidney abnormalities, and characteristic arthritic episodes.

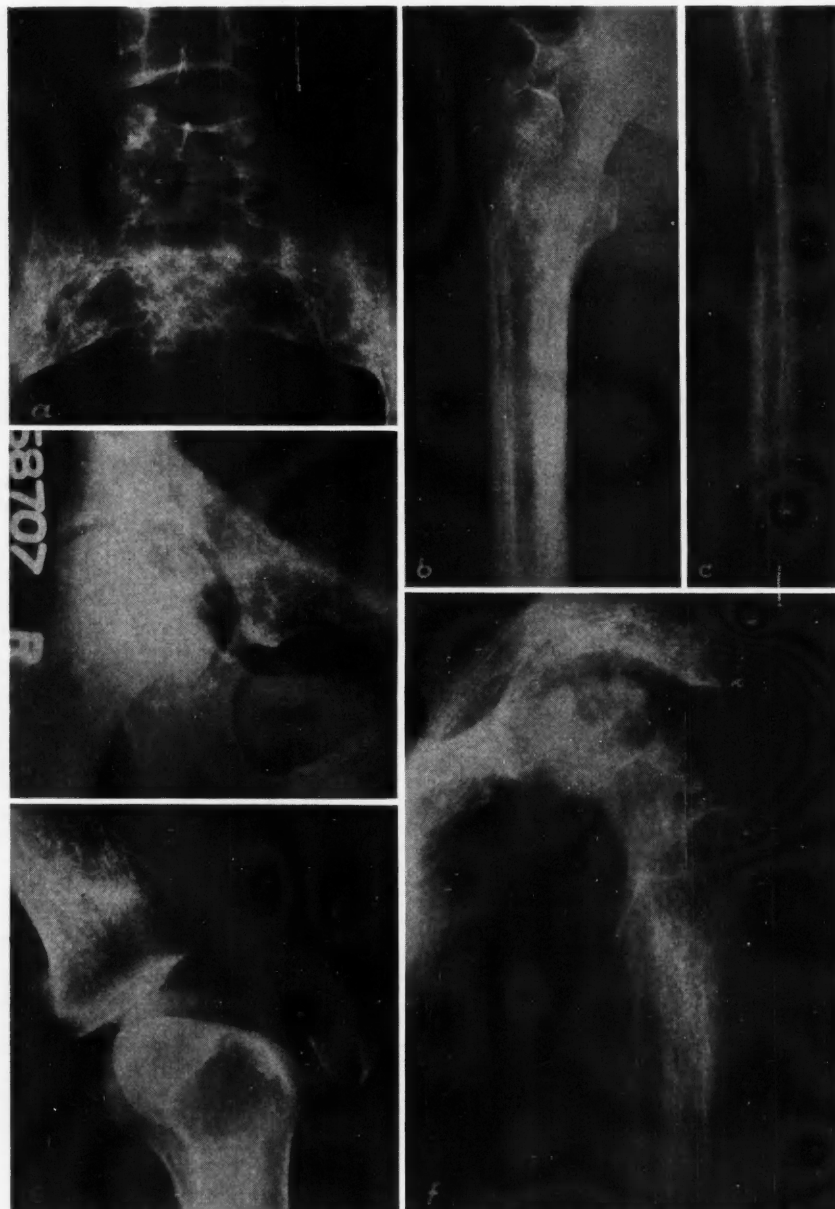


Figure 2.—(a) Spine—extensive osteoporosis, fusion of sacro-iliac joints, articular sclerosis of apophyseal joints, hypertrophic lipping; (b) femur—osteoporosis, thickening of endosteum, narrowing of medullary canal; (c) humerus—osteoporosis, cortical thickening; (d) right hip—mottled destruction of femoral head, narrowing of hip space, sub-articular lytic areas; (e) knee—moderate osteoporosis; (f) left hip—irregular erosion and absorption of large portion of articulating surface of left femoral head, osteoporosis, narrowing of hip space with sclerosis.

Gonorrheal arthritis was not considered strongly because of the absence of history of any type of urethritis, the long course, negative complement fixation test, and the spine involvement.

Other hemolytic anemias such as congenital hemolytic jaundice and erythroblastic anemia were ruled out because of their rarity in the Negro race, absence of family history, and absence of characteristic blood findings.

Photographs by William L. M. Mortensen, F.B.P.A.

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Myelography

Diagnostic Value in Lesions of the Lumbar Intervertebral Discs with a Variation in Technique

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SUMMARY

Myelography using pantopaque in greater than usual amount with a variation in technique, which is described, is believed to provide increased accuracy in differential diagnosis and precise localization of lesions in the lumbar spine. The need for multiple space exploration is eliminated and more detailed information concerning the size and shape of lesions is provided as compared to that secured by the use of 3 or 6 cc. of opaque medium and fluoroscopic examination alone.

In 53 cases in which lumbar myelography was performed and the diagnosis verified or disproved at operation, there was a 5 per cent diagnostic error in 41 instances in which the method outlined was used, as compared with 17 per cent error in 12 cases in which only 3 or 6 cc. of radiopaque material and fluoroscopy alone were used. The accuracy of the procedure would appear to warrant its use in the evaluation of patients suspected of having abnormalities of the lumbar discs associated with nerve root compression.

THERE still appears to be a sharp difference of opinion concerning the value of myelography, employing the radiopaque medium, as a diagnostic adjunct in the examination of suspected lesions of the lumbar intervertebral discs. In 1941 Dandy⁵ strongly urged that the use of contrast media be eliminated. Gillespie⁸ expressed the opinion that myelography is unnecessary. A recent article by Arismendi¹² concluded that opaque myelography yields less than a 50 per cent accuracy of diagnosis. Other observers,^{1, 7, 9, 12, 13, 14} however, regard the procedure as of considerable value. The authors use pantopaque as a diagnostic agent in all instances in which neural compression from herniation of an intervertebral disc is suspected.

In studies of the lumbar region, previous experience with pantopaque, as well as with lipiodol, led

to a feeling of dissatisfaction with the examination as then performed, using 3 or 6 cc.^{4, 6, 15} of the medium and fluoroscopic examination with the patient on the tilting table (Figure 1). The oil is confined to the anterior concavity or channel of the dural sac by this technique. Thus, with the patient in the prone position, the material does not extend to the widest part of the intrathecal lumen at all times. The sheaths of the nerve roots usually are not well filled so that lateral herniations of intervertebral discs more readily may escape detection. Since films usually are made with the patient in the prone position only, an inadequate perspective of any demonstrated abnormality is obtained. If the patient is turned from the prone to the oblique position¹⁵ in order to allow the oil to settle in the anterolateral portion of the intrathecal lumen, those

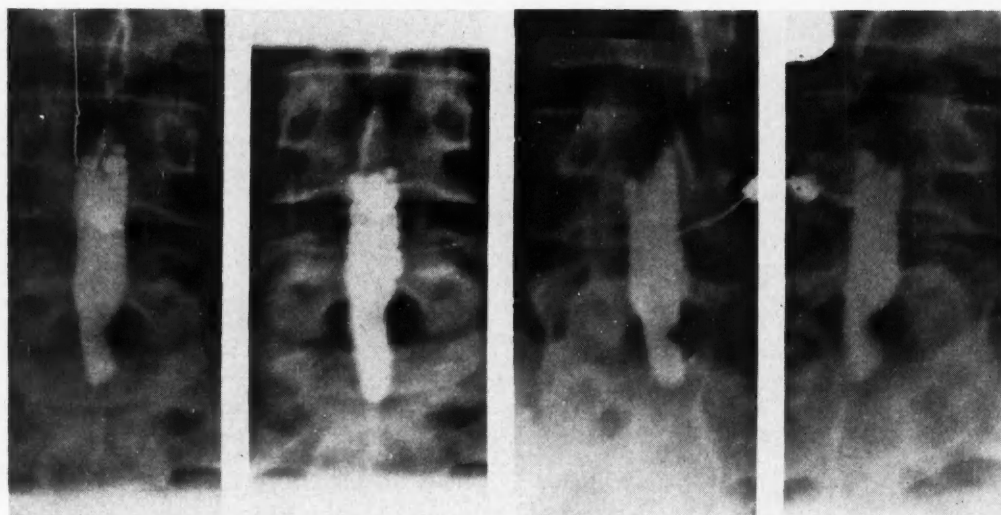


Figure 1.—Fluorographic appearance of a herniated disc at the lumbosacral interspace on the left with 3 cc. of pantopaque.

nerve root sheaths which then are filled are also obscured by the overlying lake of oil, and those which are swung into relief are emptied of oil and therefore not visible. Minor alterations in the contour of the anterior wall of the intraspinal canal may give rise to exaggerated defects (Figures 2 and 3) seen by myelography. The interpretation of these defects is often difficult and occasionally the source of diagnostic error. However, by employing a larger amount of oil for examination of the lumbar region and by using four projections with the patient standing, many of these apparent deficiencies may be overcome. The modification described in the following paragraph has been used by the authors with increasing frequency, and at times the procedure

has been used as an instrument of investigation in some patients who complained of persistent pain only in the lower part of the back.

With the patient in a lateral decubitus position, using a 19 gauge needle, a lumbar puncture is performed at the fourth or fifth interspace, selecting the space believed uninvolved. Multiple needle punctures at the time of injection appear to invite extravasation of oil. A quantity of cerebrospinal fluid is removed equal to that of the pantopaque injected. The contents of four ampules of pantopaque¹⁶ (approximately 13 cc.) is injected and four roentgeno-

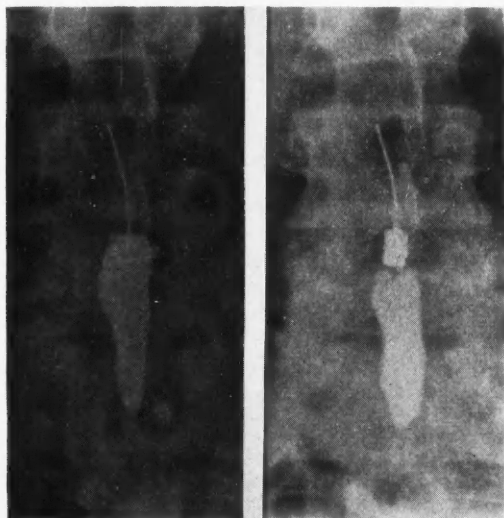


Figure 2.—Persistent defect at lumbosacral interspace misinterpreted as herniated disc (cf. Figure 1).



Figure 3.—Unilateral exaggerated defect shown with 3 cc. of pantopaque radiologically misinterpreted.

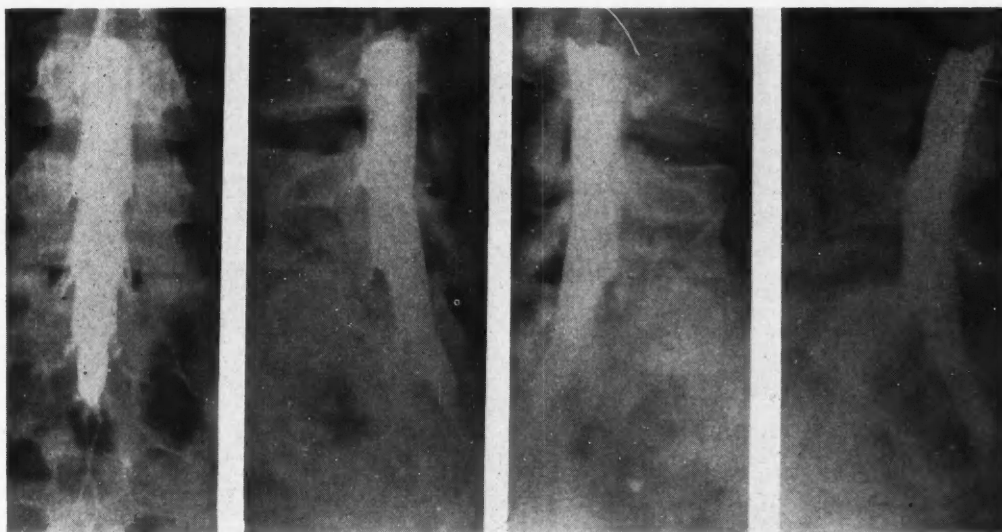


Figure 4.—Average normal sagittal, oblique and lateral projections with 13 cc. of oil.

grams taken using horizontal projections with the patient standing. The four projections (Figure 4) include a postero-anterior, a lateral and two 45-degree obliques. After the roentgenograms have been examined, if no additional views are desired, the procedure customarily has been supplemented by fluoroscopy with the patient on the tilting table. When the examination is completed the oil is withdrawn^{11,14} and the needle removed. The patient is then instructed to remain horizontal for 24 hours. The use of this amount of pantopaque does not appear to be harmful.

This modification of the method of examination appears to overcome the deficiencies¹⁰ previously indicated. Irregularities in the anterior por-

tion of the spinal canal, inconstantly observed and of variable appearance at fluoroscopic examination, present a less confusing picture when outlined (Figure 5) by the greater amount of oil. The full extent of larger defects (Figure 6) is visible by the four projections and a three-dimensional concept of the lesion is gained. Two to five segments of the lumbar area are visualized for comparison (Figures 7, 8, 9, 10) on the same film. The distal thecal sac is fully outlined (Figure 11) in the standing position,¹⁰ as compared to the partial outline of an incompletely filled sac in the prone position. The filling of the lower lumbar and upper sacral nerve root cuffs is greater by this method and the oblique projections bring them into maximum silhouette perpendicular

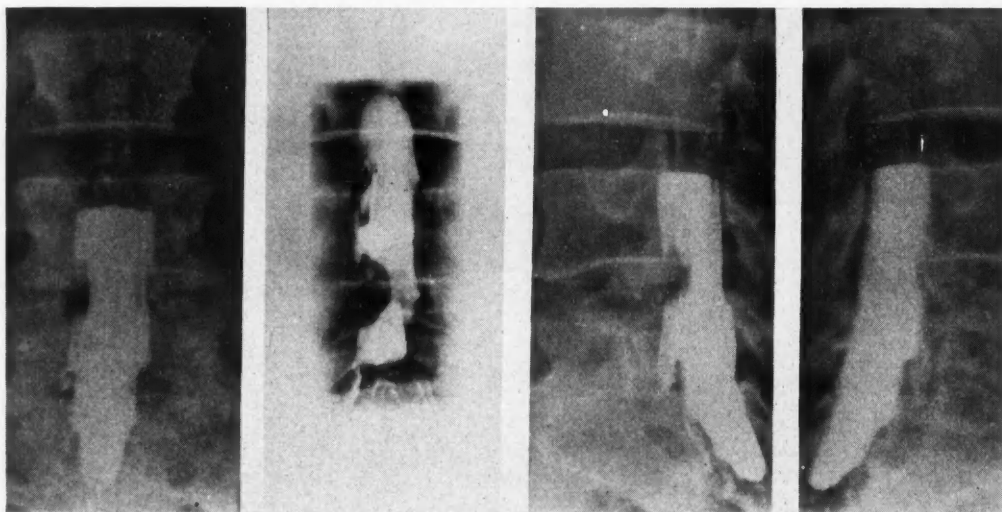


Figure 5.—Disc herniation at the fourth lumbar interspace on the right. Comparison fluorogram with the patient prone and 6 cc. of oil exaggerates the defect and gives incomplete information (cf. Fig. 3).

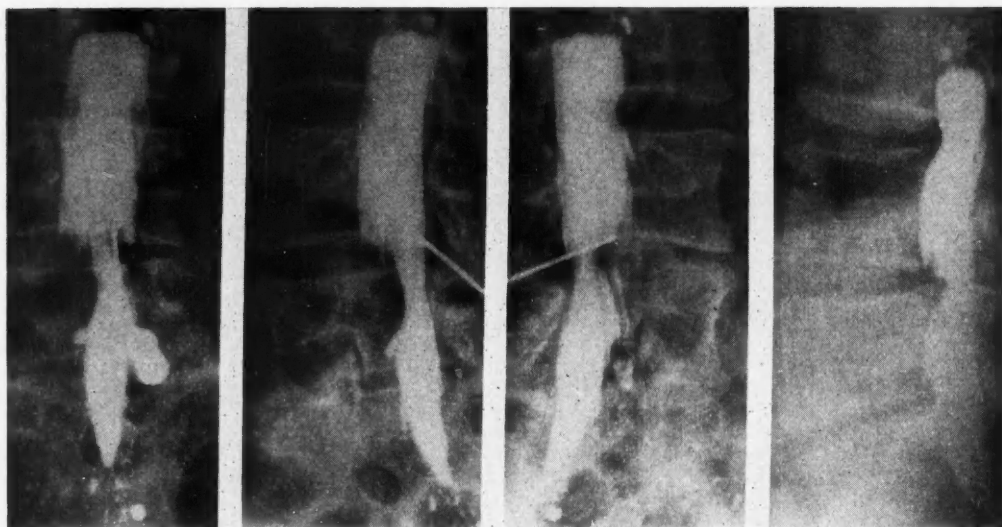


Figure 6.—Complete prolapse of the disc over the fifth lumbar body. Fourth interspace narrowed.

to the direction of the roentgen beam. The overlying column of oil does not obscure the root cuffs in the oblique views. Small lateral herniations may be identified (Figures 12 and 13). Droplet formation is avoided.

In certain instances (Figure 14), herniations of intervertebral discs may be demonstrated to better advantage by utilizing a thin lake¹⁵ of oil than by filling the whole lower subarachnoid space. Hence the need for fluoroscopic examination with the patient on the tilting table after roentgenograms are taken with the patient standing. The two meth-

ods are considered supplementary and one is not used to the exclusion of the other.

There are patients who present signs and symptoms implicating one of the lumbosacral nerve roots in whom myelography discloses a defect not characteristic of a herniated disc, but rather a ridge-like deformity of the anterior portion of the radiopaque column. The variable appearance of this defect (Figure 15) can be demonstrated by careful maneuvers^{3, 15} with the smaller amounts of oil. The larger amount of oil defines this abnormality more clearly (Figures 16 and 17).

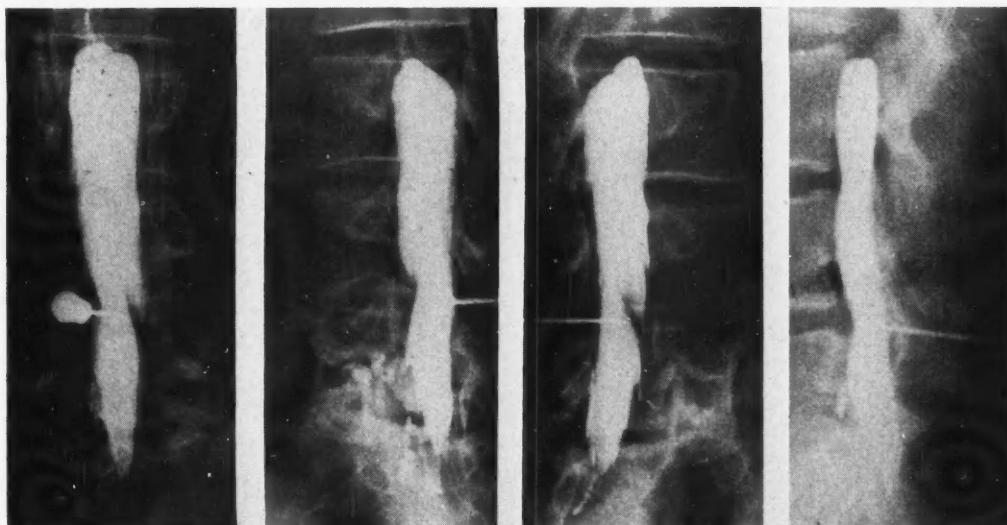


Figure 7.—Disc herniation at the right fourth interspace showing shallow indentation, easily identified by the visualization of a long segment of the canal. Note compression sufficient to reveal adjacent nerves of cauda equina which are rarely visible with smaller amounts of oil.

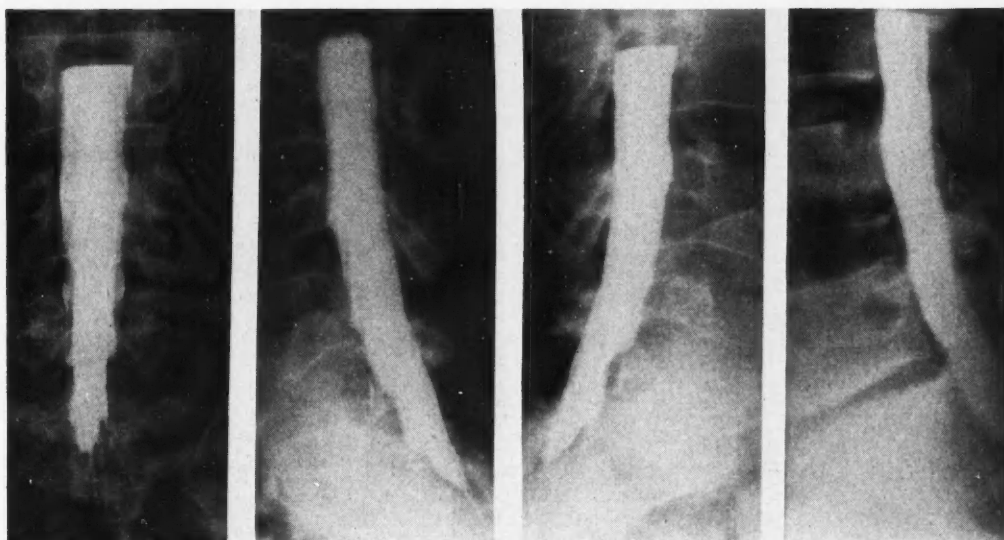


Figure 8.—Small herniation at the lumbosacral interspace on the left suggested by the shortening of the root cuff. Oblique projection diagnostic.

Decompression of the affected nerve root or roots may relieve the symptoms. As it is not the intention to enter into a discussion of the pathologic aspects of the condition, the descriptive term "ridge defect" is used here to designate the radiographic appearance of the abnormality as observed at myelography. The authors are avoiding the use of such controversial terms as "concealed discs," "retropulsions," "protruded discs," and "hypertrophy of the ligamentum flavum." Nevertheless, the defect usually may be distinguished radiologically from the myelographic picture produced by a herniated disc.

One hundred and nineteen consecutive myelograms have been done by one or both of the authors

in the past 18 months. Of this number there were 72 in which an abnormality was detected in the lumbar region. The diagnosis was verified or disproved by operation in 53 instances. Considering only this last group of 53 patients the following pre-operative diagnoses were made:

Herniated disc	44
Ridge defect.....	10

There were four error in diagnosis.* Of these, there were two errors (17 per cent) of interpreta-

*A herniated disc was found in one of the patients operated upon elsewhere. This does not change the authors' statistics, but does indicate the expected probability of diagnostic error in a negative sense, as Arismendi showed in the group of patients operated upon despite negative results of fluoroscopic examination.



Figure 9.—Disc herniation at the lumbosacral interspace on the right shown only in the oblique projection.

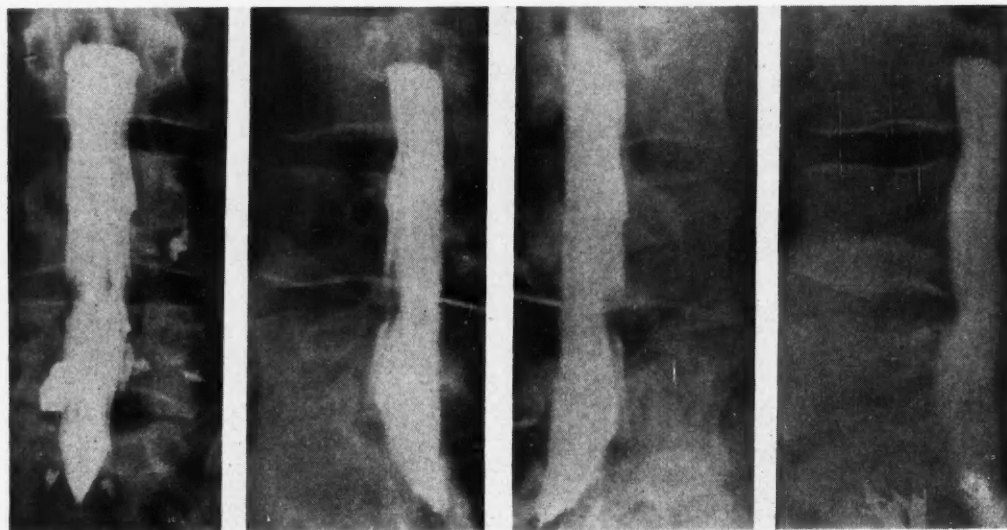


Figure 10.—Disc herniation at the lumbosacral interspace on the left shown only by the gross displacement of the pantopaque column. Note the symmetrical asymptomatic deformity at the fourth interspace.

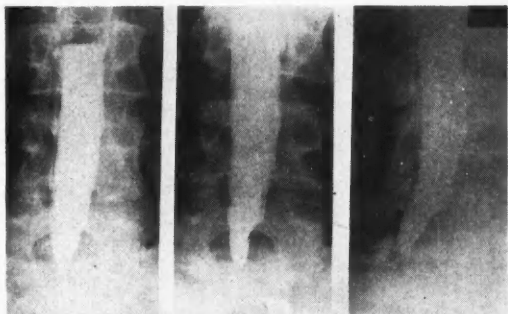


Figure 11.—Disc herniation at the lumbosacral interspace on the left with more rostral termination of the dura. Shown in erect and prone sagittal and oblique projections respectively. Obviously a small amount of oil would have been sufficient in this instance.

tion in 13 myelograms using 3 or 6 cc. of pantopaque. There were two errors (5 per cent) in 41 myelograms, using 12 or more cc. of pantopaque. One error was made the first time the larger quantity of oil was used. In the second error, subsequent events showed that an appearance interpreted as a herniated disc was due to failure of filling of the nerve root cuff caused by edematous swelling of the nerve secondary to pressure of a ridge defect at the interspace above. In both instances there was disagreement between the authors as to the diagnosis.

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To Orrin S. Cook, Mercy Hospital, Sacramento, California, for making available additional roentgenograms for review.

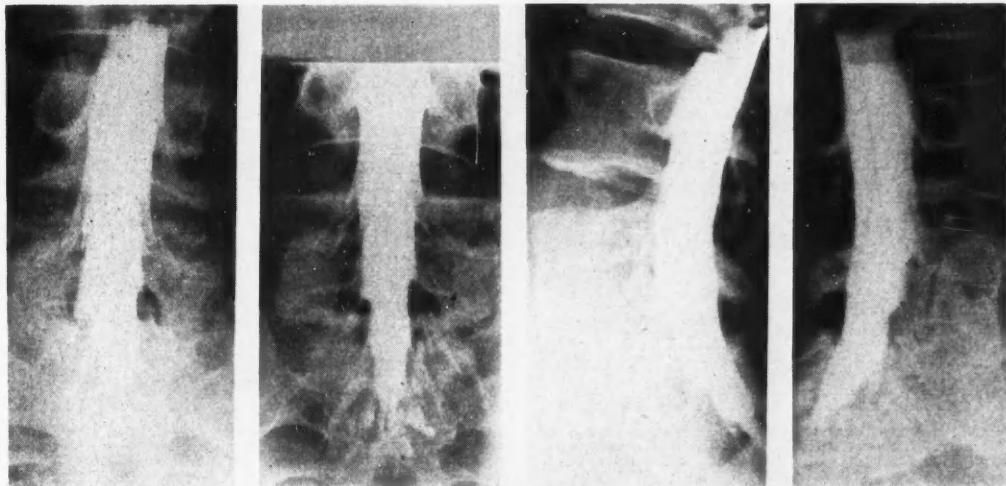


Figure 12.—Small lateral herniation at the lumbosacral interspace on the left clearly outlined by localized root compression. Prone fluorogram shows less complete filling of dural sac but root cuffs have already been filled with the patient erect.

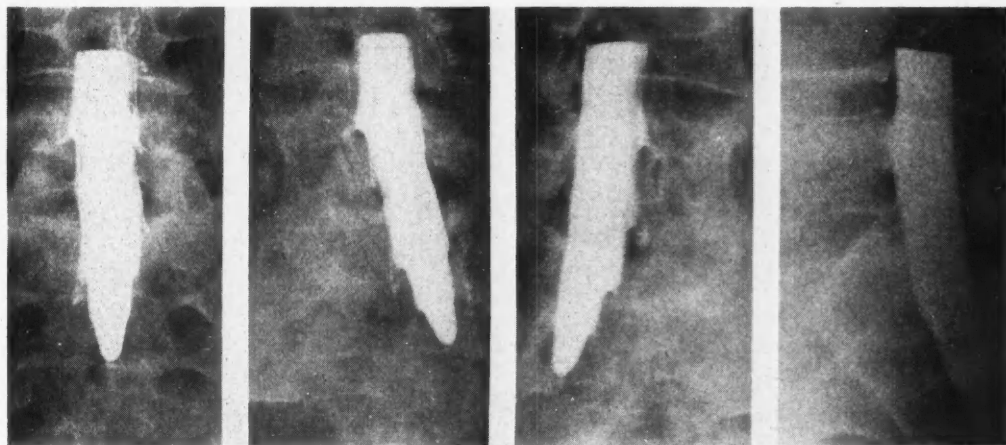


Figure 13.—Lateral herniation at the lumbosacral interspace on the right. Identified only by lack of filling of nerve root cuff and by measurable difference in oblique diameters of pantopaque column.

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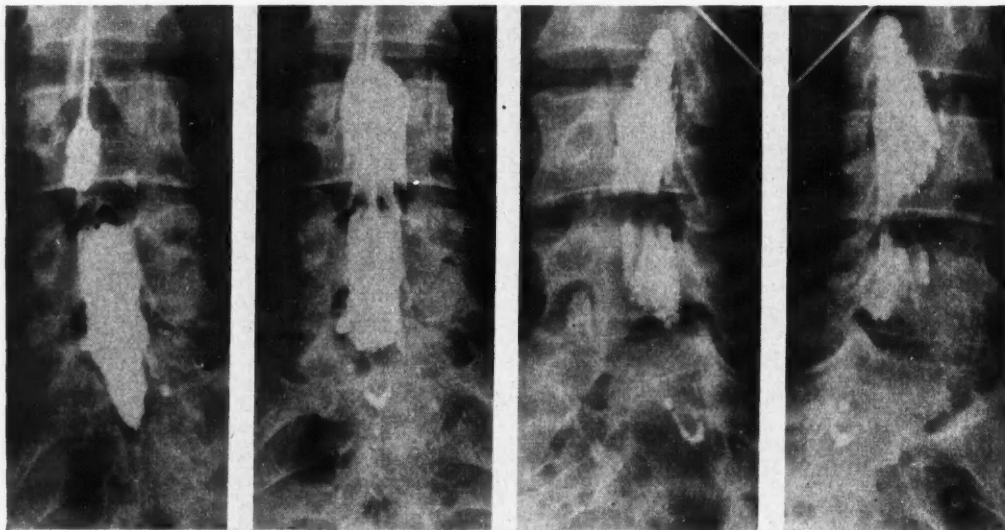


Figure 14.—Centrally placed herniation at the fourth interspace with insufficient pantopaque (6 cc.) to study the area of abnormality with the patient erect. Well shown on fluorogram with patient prone and poorly outlined in oblique projections. This is one of the early cases before using the greatest amounts of pantopaque.

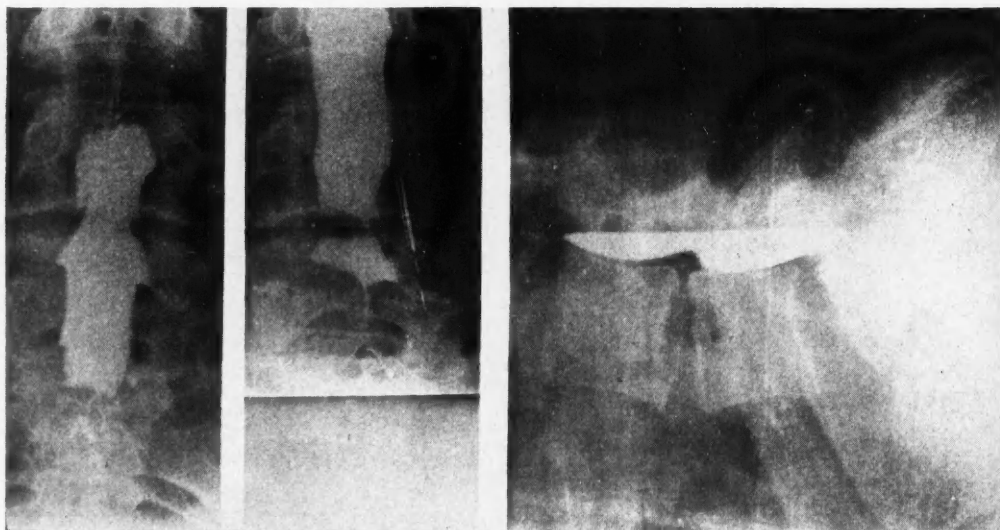


Figure 15.—Variable appearance and incomplete delineation of a narrow "ridge defect" shown on fluorogram and lateral roentgenogram.

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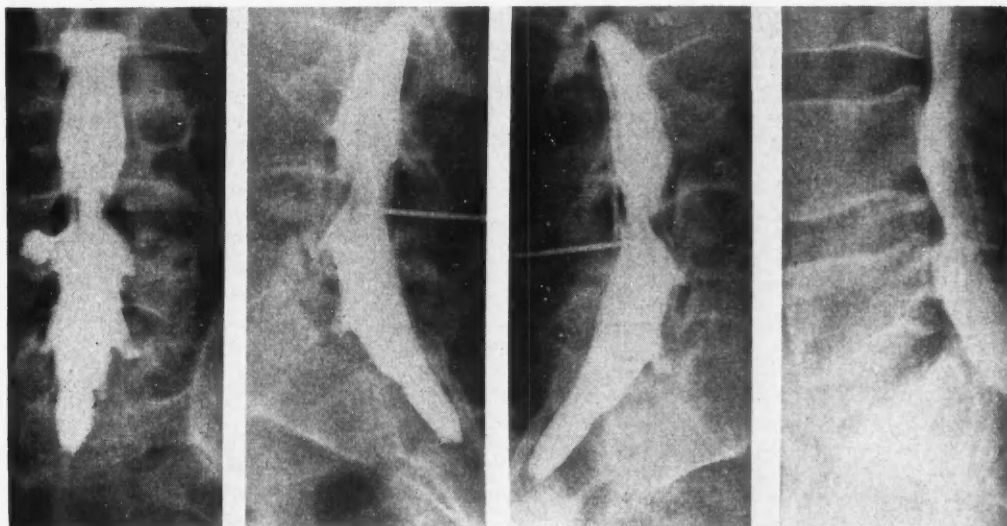


Figure 16.—Large anterior and lateral symmetrical deformity at the fourth interspace, obviously as prominent as many disc herniations.

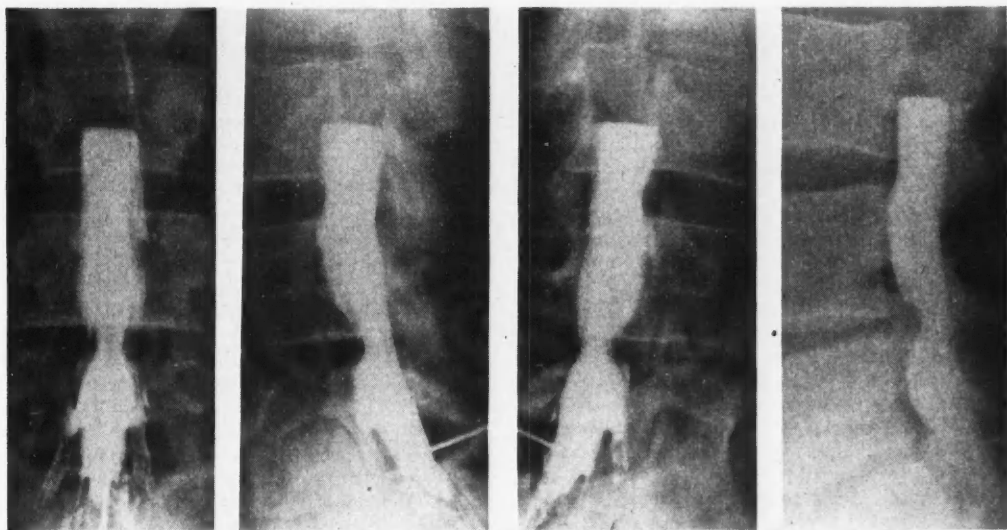


Figure 17.—Symmetrical constriction at the fourth interspace by "ridge defect." Note central and dorsal displacement of the visible nerves of the cauda equina by the localized prominence. This type of abnormality has not been encountered at the lumbosacral interspace.

The Differential Diagnosis of Rheumatism

A Clinical Study of 500 Cases

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SUMMARY

Five hundred consecutive admissions to the rheumatism service of a large hospital were reviewed in an effort to establish criteria for accurate differential diagnosis in rheumatic disorders. Forty-one per cent of the patients presented evidence of articular involvement or arthritis; 28 per cent had non-articular rheumatism, embracing the various types of fibrositis; 7 per cent had musculoskeletal neurones, and 24 per cent had a variety of diseases unrelated to the musculoskeletal system. A working classification of the various causes of musculoskeletal pain is presented and criteria for the differentiation of the individual diseases are suggested.

“WHAT is Truth?” asked jesting Pilate, and would not stay for an answer.” Thus Sir Francis Bacon begins his famous essay on truth. And were a modern cynic to similarly ask, “What is Rheumatism?” though he did indeed stay for an answer, it is not likely he would receive one. Here truth lies in the fact that “Rheumatism” is not a diagnosis, and is neither a clinical nor a pathological entity, but is a collective term, signifying only that prominent among the complaints of the patient is that of pain in or about muscles or joints. It is a symptom diagnosis, little better than “headache” or “backache” or “sore toe.” It states nothing as to the cause of the complaint, nor as to the nature of the underlying pathologic change, and offers little on which to plan a rational program of treatment. Moreover, grave and remediable disorders may masquerade beneath the cloak of rheumatism and be treated symptomatically, often with great detriment to the recovery of the patient, and sometimes to his life.

Once it is recognized that rheumatism is a symptom, and not a diagnosis, the need for differential diagnosis is clear. Although they are historically the most ancient diseases of which we have any pathologic evidence—the hip of the Java Man, who lived 500,000 years ago, showed osteoarthritis—and although in point of causing disability they are exceeded only by neuropsychiatric disorders, the rheumatic diseases have not won the interest and enthusiasm of many physicians. Perhaps because

etiology is often uncertain, or because pathologic studies are meagre, or because treatment is viewed with pessimism, this group of diseases has in general been relegated to the position of an unwanted stepchild of medicine. Patients are quick to sense this attitude, and as a result many of them turn to cultists, occasionally with benefit, but often with lasting harm.

This state of affairs is largely our own fault, and could be quickly corrected if more physicians would recognize that differential diagnosis can be just as accurate and just as fascinating in this group of diseases as in the more glamorous fields of cardiology or gastroenterology. It cannot be stressed too strongly that once an accurate differential diagnosis has been made, a therapeutic program can be planned to fit each case, and the results of such integrated treatment will bring as much satisfaction to the patient and to the physician as in any of the more dramatic diseases.

The key to the entire problem lies in the question of differential diagnosis, for in planning treatment it makes a great deal of difference whether the patient has rheumatoid or osteoarthritis, or whether he has one of the manifestations of fibrositis, or whether skeletal pain is of visceral origin or a part of the pattern of an underlying neurosis. Treatment so valuable as to be almost specific in one case may be useless or even harmful in another. Furthermore, the prognosis of the individual disease entities varies widely, and is often the matter of greatest concern to the patient.

In approaching the question of differential diagnosis the physician is immediately confronted with the grim specter of classification. In most medical textbooks will be found two time-honored tables, one “The Classification of Arthritis” and the other “Differential Diagnosis of Rheumatoid and Osteoarthritis.” Valuable though these are, they are inadequate to meet the diagnostic problem presented by a patient with a backache or a painful shoulder. What is needed is a simple group of pigeonholes into which all skeletal complaints can be fitted, followed by a further breakdown into disease entities.

As a preliminary approach to this problem, the records of all admissions to the rheumatism service of the U. S. Veterans’ Hospital, Wood, Wisconsin, were reviewed, and the final diagnosis determined in each case. Then the histories, physical findings, and the results of laboratory and x-ray examinations were analyzed and tabulated, in an effort to develop criteria whereby a simple classification could be evolved. During the period from January 1, 1947, to March 15, 1948, 500 patients were admitted to

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the service because of musculoskeletal complaints. It was found that all of them could be classified into the following four main groups:

Group I.	Articular rheumatism	207	41%
Group II.	Non-articular rheumatism ..	138	28%
Group III.	Psychogenic rheumatism....	37	7%
Group IV.	Non-rheumatic diseases	118	24%
Total	.....	500	100%

It will be seen that of a group of 500 consecutive unselected patients with "rheumatism," less than half had any form of arthritis, and in nearly one-third the cause of the complaints was entirely unrelated to the musculoskeletal system. These figures illustrate the inadequacy of symptomatic treatment in this group of patients, and the value of accurate diagnosis. This will be emphasized even more strongly when the disease entities embraced in each of the four groups are considered.

Group I—Articular Rheumatism

This group comprises those patients who actually have some form of arthritis. A diagnosis of arthritis should not be made unless there is objective evidence of joint disease, such as signs of local inflammation, periarticular swelling, effusion into the joint, crepitus, or limitation of motion. Pain in a joint, without evidence of articular involvement, should be classed as arthralgia, and may occur in a variety of disorders, rheumatic and non-rheumatic. While many varieties of arthritis have been described, for practical purposes the 207 cases in this series could be satisfactorily classified under only six divisions, as shown in Table 1.

TABLE 1.—Classification of Articular Rheumatism (Arthritis)

Diagnosis	Cases	% of Group	% of Series
1. Rheumatoid arthritis	99	48	20
2. Osteoarthritis	74	36	15
3. Infectious arthritis	5	2	1
4. Gout	14	7	3
5. Rheumatic fever	13	6	2
6. Charcot joint	2	1	...
Total	207	100%	41%

All of the patients in this group showed objective evidence of joint involvement, as previously described. Rheumatoid and osteoarthritis together constituted 84 per cent of the cases of arthritis, with the rheumatoid group predominating.

1. *Rheumatoid arthritis.* The 99 cases in this group were further classified, according to the type of involvement, as follows:

(a) Rheumatoid arthritis (peripheral joints)	61
(b) Rheumatoid spondylitis	27
(c) Reiter's syndrome	9
(d) Palindromic rheumatism	2
Total	99

(a) *Rheumatoid arthritis involving peripheral joints:* In these patients evidence of joint involve-

ment consisted of periarticular swelling, effusions into the joint spaces, muscle atrophy and limitation of motion, the latter due to muscle spasm in acute cases, and fibrous or bony ankylosis in those of long standing. In addition, evidence of the constitutional nature of the disease was generally present, such as fever, weight loss, malaise, asthenia, occasionally leukocytosis, and almost invariably an elevation of the sedimentation rate. The population from which this series was taken was almost entirely male, and it was noted that the classic symmetric involvement of the hands, with fusiform fingers, was seen less often than in the female, while involvement of the smaller joints of the feet seemed much more common.

(b) *Rheumatoid spondylitis:* The unusually high incidence of spondylitis in this series, almost half that of peripheral rheumatoid arthritis, is explained by the great predominance of males, in whom this disease is approximately twenty times as frequent as in females.² The most important objective evidence included limitation of motion of the lumbar spine, which was usually flattened, failure of reversal of the lumbar curve on forward flexion, diminished chest expansion and vital capacity, elevation of the sedimentation rate, and x-ray evidence of inflammatory or destructive changes in the sacro-iliac joints. In long-standing cases additional x-ray evidence was present, with the "bamboo spine" and calcification of the anterior spinal ligaments. Spinal fluid abnormalities were rarely found. This disease is one of the most commonly overlooked causes of backache, particularly in young males. The diagnosis can usually be made on physical examination alone, and is very important, because deep x-ray therapy gives excellent results if used before irreversible changes have occurred.

(c) *Reiter's syndrome.* This consists of the triad of non-specific urethritis, associated with purulent conjunctivitis and arthritis, and sometimes with gastro-intestinal disturbance. It is still a question whether this represents a disease entity, or whether the non-specific infection acts as a trigger mechanism, precipitating an atypical rheumatoid arthritis. The course is milder, and joint residuals less frequent. Recent work³ has suggested that pleuropneumonia-like organisms may be related to this syndrome, and that streptomycin may be effective. Penicillin and sulfonamides are of no value, as in rheumatoid arthritis, but in sharp contrast to gonorrheal arthritis, with which it is most commonly confused. The distinction is extremely important, because of the favorable results obtainable with antibiotics in the latter, especially when used early.

(d) *Palindromic rheumatism.* This disease, first adequately described by Hench,⁷ is characterized by recurrent episodes of acute arthritis, often over many years, with normal joints between attacks, and without the residual effects in the joints expected after recurrences of typical rheumatoid arthritis. The pattern is suggestive of gout or of an allergic state, yet the frequency with which women are affected, and the absence of hyperuricemia,

make the former diagnosis untenable. A relation to allergic reaction, though suggested, has not been proved. Since typical rheumatoid arthritis eventually develops in some patients with this pattern, many observers feel it is merely a variant of that disease, and it is so classified here.

2. *Osteoarthritis*. This occurs in two main forms, generalized and traumatic, and in this series had the following incidence:

Generalized osteoarthritis	52
Traumatic osteoarthritis	22
Total	74

Generalized osteoarthritis is seen chiefly in individuals past the age of 40, and may be regarded as one manifestation of the aging process, with the joints gradually wearing out with use and particularly with overuse. Thus it is more common in the weight-bearing joints, particularly the knees, hips, and spine, and in the fingertips, where it gives rise to the classical Heberden's nodes. The additional burden which obesity, faulty posture, or congenital deformities impose on the weight-bearing joints accounts for the frequent association of osteoarthritis with these defects and affords a clear-cut indication for appropriate therapy. Objective findings in the joints consist chiefly of minimal periarticular swelling, crepitus, and occasionally bony block by impingement of osteophytes. Ankylosis does not occur, except occasionally in the spine by fusion of osteophytes on contiguous vertebrae. This is an extremely important point in prognosis. Often reassurance that ankylosis, crippling and deformity will not occur is more important to the patient than any other aspect of treatment.

In addition to the local joint findings described, the diagnosis of osteoarthritis is based on the age of the patient, usually past 50, frequent coexistence of obesity or postural strain and the absence of constitutional manifestations, such as fever, anemia, leukocytosis, or elevation of the sedimentation rate. In traumatic osteoarthritis the joint has been damaged by such factors as a severe blow or wrench, a fracture into the joint, repeated subluxations, or the trauma incidental to certain occupations involving excessive use of certain joints. A form of great clinical importance is cervical osteoarthritis. In this region the osteophytes frequently impinge on the nerve roots of the cervical or brachial plexuses, often causing bizarre symptoms of headache, painful shoulders, and radiating pains in the arms, which are readily misinterpreted if the underlying pathologic change is not recognized.

In this connection one important diagnostic error must be stressed. In a patient past 40 complaining of backache, the roentgenological demonstration of lumbar osteophytes is not a sufficient explanation of the backache, inasmuch as osteophyte formation is not necessarily abnormal at this age. It is not unusual for a patient to have a pyelogram for hematuria, or a plain film of the abdomen for an acute abdominal emergency, and have the roentgenologist report an incidental finding of lumbar osteoarthritis,

often very marked. Yet frequently these patients have never complained of backache. Similarly it is not uncommon for a herniated intervertebral disc to be overlooked for years, because the physician accepts the x-ray report of "hypertrophic arthritis" as an explanation of the patient's symptoms. Lumbar osteophytes are usually painless, unless traumatized, and it is imperative to rule out all other possibilities before accepting that diagnosis as an explanation for back pain.

3. *Infectious arthritis*. In this series there were only five cases representing actual infection of a joint. One patient had long-standing tuberculosis of the cervical spine. Two had suppurative arthritis of the hip joint; in one case the disease followed rupture of the appendix, and in the other the origin was unknown. Two patients had gonococcal arthritis of the knee.

The great decrease in actual joint infections reflects the decreasing incidence of tuberculosis and the effectiveness of antibiotics and sulfonamides in preventing septicemia. Gonorrheal rheumatism, once so common, is now a rare disease, and is diagnosed more often than it actually occurs. Since gonorrheal arthritis represents a metastatic implant of organisms in the synovial membrane, it must be preceded by bacteremia, and hence is most likely to occur shortly after acute gonorrhea inadequately treated or after instrumentation or prostatic massage in the course of chronic gonorrhea. So-called chronic gonorrheal rheumatism is usually rheumatoid arthritis in which the genital infection served as a trigger-mechanism precipitating the attack, just as other infections may.

Whenever a joint infection is suspected, it is important to examine synovial fluid if present, because it is sometimes possible to recover and identify the causative organism. The character of the exudate is also important, since grossly purulent exudate may suggest the possibility of suppurative arthritis, such as may arise from rupture of osteomyelitis into the joint space. In such a case the glycolytic ferment of the polymorphonuclear cells may lead to a rapid dissolution of hyaline cartilage and to irreversible joint damage. One of the most serious errors made in the diagnosis of joint disease is failure to recognize suppurative arthritis and neglecting specific treatment or surgical drainage until the joint is hopelessly damaged.

4. *Gout*. This has been described⁸ as an almost forgotten disease. In a typical case, however, the diagnosis is usually thought of and easily made. Classic involvement of the metatarsophalangeal joint of the great toe in an obese middle-aged male of convivial habits is readily recognized. Unfortunately many, and indeed, most cases do not follow this pattern. Gout is believed to be one of the inborn errors of metabolism, and hence is a lifelong disease which is usually not clinically manifest before the age of 40. Recent experimental work⁹ has suggested that hyperuricemia is due to an excess of a "bound" form of uric acid in the blood, and thus may represent deficiency of an enzyme capable of splitting

off this bound fraction. This theory would help explain the lack of correlation between the uric acid level and the clinical picture, and may explain the action of colchicine.

The diagnosis of gout rests on four main features, (1) acute arthritis, (2) hyperuricemia, (3) a characteristic pattern consisting of repeated episodes of acute attacks, which leave no residuals, with normal joints between attacks, and (4) the presence of tophi. When a patient is seen in the first attack all other features may be lacking except the acute arthritis. For this reason gout must be suspected in all cases of acute arthritis in the male, regardless of the joint involved. The diagnosis is strengthened if the arthritis develops postoperatively, or when there is a history of such precipitating factors as injections of vitamin B complex, liver extract, ergotamine tartrate, or mercurial diuretics.

In this series gout comprised 7 per cent of the cases of arthritis. Many of the patients had been admitted previously with such diagnoses as rheumatic fever, rheumatoid arthritis, sprained ankle, or stubbed toe. It is important to recognize this disease, because the treatment is very different from that of arthritis, restriction of high-purine foods is advisable, a specific—colchicine—is available and very effective during the acute attack, and finally because of the favorable prognosis.

5. *Rheumatic Fever.* The cases of rheumatic fever in the series all represented diagnostic errors, since when it was recognized on admission the patients were sent directly to the cardiac service. The patients were usually admitted with the diagnosis of "acute arthritis," an unsatisfactory term since, on study, the disease may prove to be acute rheumatoid arthritis, traumatic synovitis, gout, a joint infection, or rheumatic fever. The differentiation of rheumatic fever and acute rheumatoid arthritis is often very difficult, and in some cases can be made only after several weeks of observation.⁴ Factors favoring a diagnosis of rheumatic fever are (1) a history of previous rheumatic fever, (2) evidence of active carditis, or the presence of rheumatic valvular disease, (3) prompt response to salicylates, and (4) the transient migratory character of the arthritis. Most important in the diagnosis of rheumatoid arthritis are (1) persistence of joint involvement, (2) the development of residual periarticular thickening, swelling, and limitation of motion. Other evidences, such as fever, leukocytosis, elevation of the sedimentation rate, subcutaneous nodules, and a history of preceding streptococcal infection, may be seen in both diseases, and are of little help in distinguishing them. X-ray studies are negative in rheumatic fever, except for soft tissue swelling; and in rheumatoid arthritis usually several months must elapse before the characteristic x-ray changes are demonstrable.

6. *Charcot Joint.* Two cases of Charcot joint were recognized. Both were associated with the clinical and spinal fluid changes of tabes dorsalis. Both involved the knee joint, although any joint may be affected. The large boggy joints, with the "bag of bones" feeling, crepitus, and the characteristic x-ray

picture showing disintegration of the joint, make diagnosis easy if the disease is considered.

Group II. Non-Articular Rheumatism

This group comprises those patients whose complaints were chiefly referable to the white fibrous tissues of the body rather than to the joints themselves. The fashionable term for this disease is fibrositis, and involves the concept that the various connective tissues, the fascial planes, intramuscular and perineural septa, tendon sheaths, bursae, and joint capsules may be affected by a non-suppurative type of inflammation. While the pathologic evidence supporting this view is not entirely convincing, nevertheless fibrositis is a distinct clinical entity and can frequently be diagnosed from the history alone. The patients complain of aching and stiffness of muscles and joints, usually worse on arising or after prolonged sitting—the so-called "jell" phenomenon. They limber up and improve with exercise, but with fatigue their complaints recur late in the day, thus giving a "dicrotic curve" of symptoms. Their complaints are aggravated by chilling and dampness, and relieved by heat, such as a hot tub bath or shower. They are the weather prophets and often claim the ability to foretell storms and inclement weather. They usually claim that their complaints are worse in the winter and spring months, although in this series the greatest number of admissions was in June, July, and August.

The chief features in the diagnosis of fibrositis are the characteristic history, often indicative of disease of many years' duration; the absence of objective evidence of peripheral joint involvement, although arthralgia may be present due to periarticular fibrositis or "capsulitis"; and the absence of constitutional manifestations. In most cases the sedimentation rate is normal, although it may be slightly elevated. In the generalized form of fibrositis a characteristic finding is the presence of fibrositic nodules, which vary in size from that of a pea to that of a quarter and may be felt as "trigger points" deep in muscles, chiefly in interscapular, lumbar, and gluteal areas, and about bony prominences, especially over the sacroiliac areas. Pressure over these tender nodules may reproduce the patient's complaints, including various radiating or sciatic pains. Frequently the local infiltration of these trigger points with procaine solution will give dramatic and gratifying relief.

In this series there were 138 cases classed as non-articular rheumatism, or 28 per cent of the total admissions. Of this group the following types were recognized:

<i>Types of Non-Articular Rheumatism</i>	
Generalized fibrositis	102
Painful shoulder	27
Shoulder-hand syndrome	8
Acute myositis	1
Total	138

Generalized fibrositis was thus the most frequent single diagnosis made. The term "painful shoulder" included such localized forms of fibrositis as peri-

arthritis of the shoulder, "frozen shoulder," subdeltoid bursitis, and supraspinatus tendinitis. An important diagnostic point is the fact that in no instance was monarticular involvement of the shoulder joint due to localized arthritis of the shoulder. The shoulder-hand syndrome, recently described,¹ consists of periartthritis of the shoulder, usually the left, with pain, tenderness, and limitation of motion, often associated with swelling of the small joints of the hand and fingers on the corresponding side. This interesting condition is most frequently seen following myocardial infarction. In only one instance in this series was the diagnosis of acute myositis made. This is in sharp contrast to the frequency with which this diagnosis is generally used as an explanation for muscular aching and stiffness, lumbago, torticollis, and allied conditions more properly attributable to intramuscular fibrositis. The single case was that of a 22-year-old male who gave a history of several episodes of undiagnosed fever, associated with pain, stiffness, and tender nodules in various muscles, together with leukocytosis, elevated sedimentation rate, and generalized lymphadenopathy, resembling the clinical picture of dermatomyositis except for the absence of cutaneous involvement.

Group III. Psychogenic Rheumatism

Thirty-seven patients, 7 per cent of the total, were considered to have some form of psychogenic rheumatism. Prior to World War II the frequency with which musculoskeletal complaints might occur as a manifestation of neurosis was not generally appreciated. During the war, however, the experience of many observers in military and naval hospitals seemed to indicate that approximately 20 per cent of patients admitted for rheumatic complaints had no objective evidence of musculoskeletal or other organic disease, and presented clear-cut evidence of neuropsychiatric disorder, ranging from mild neurasthenia with vague aches and pains to full-blown conversion hysteria, with bizarre hyperesthesias and anesthesias, eccentric gaits and postures.

In making a diagnosis of psychogenic rheumatism, positive as well as negative evidence is necessary. The diagnosis may be suspected when objective evidence of musculoskeletal involvement is absent, or when the symptoms are greatly out of proportion to the findings. In addition there will usually be present multiple associated complaints referable to other systems of the body, headaches, palpitation, functional digestive complaints, tremors, sweating, and most important, a psychiatric background of maladjustment often going back to childhood. In several instances sodium amylal interviews were very helpful in evaluating these patients. A common error is to classify these cases as examples of fibrositis or muscular rheumatism. This is unfortunate, because treatment directed to the musculoskeletal system alone is not only unsuccessful, but may be harmful in that it tends to fix the neurosis more deeply, and serves to increase the preoccupation of the patient with the symptoms

rather than with the solution of the causative factors. Many observers have noted the uniformly poor response of these patients to drug or physical therapy, and have contrasted it with the usually favorable response of the fibrositic group. Some⁵ have suggested that this is a valuable point in differential diagnosis, pointing out that the patient with fibrositis is affected by changes in his external environment, while the one with psychogenic rheumatism is similarly at the mercy of his internal, or emotional environment. It is important to recognize these patients promptly, because the therapeutic failure which will invariably follow an erroneous diagnosis will bring discredit to the physician and prolong the disability of the patient.

Group IV. Non-Rheumatic Diseases

One hundred eighteen patients, nearly one-fourth of all those admitted to the rheumatism service in this series, had pain in the musculoskeletal system due to various causes originating entirely outside that system. These were further classified according to the following table:

Non-Rheumatic Diseases	
General medical disorders.....	31
Orthopedic disorders	34
Disc syndrome	31
Neurological disorders	13
Osteoporosis	5
Allergic disease	4
Total	118

The wide range of causes of pain simulating rheumatic disease is at once apparent and again emphasizes the importance of careful study. All of these 118 cases represent errors in diagnosis, most of which were due to neglect of the two cardinal principles previously emphasized: (1) a diagnosis of rheumatism should not be based solely on the presenting complaint of pain, and (2) a diagnosis of arthritis should never be made in the absence of objective evidence of joint involvement.

The most common error was failure to recognize peripheral vascular disease, and the attribution of the cramps of arterial insufficiency to muscular rheumatism or the pain and swelling of thrombophlebitis to arthritis. One patient with thrombosis of the axillary vein was admitted as having acute arthritis of the shoulder. In two instances in which the presenting complaint was shoulder pain the underlying myocardial infarction had not been recognized. Among the orthopedic group were examples of Perthe's disease, Osgood-Schlatter's disease, spondylolisthesis, and congenital deformities, notably shortening of one leg. One patient admitted with the diagnosis of arthritis of the shoulder actually had a complete anterior dislocation of the humeral head.

Of the 31 patients who had the "disc syndrome," consisting of low back pain with gluteal or sciatic radiation, about half were subsequently shown, by myelography or at operation, to have a ruptured intervertebral disc. Several of these cases had gone

unrecognized for years, and as mentioned above, in some a ruptured disc was not suspected because the physician accepted the diagnosis of hypertrophic arthritis, based on the presence of lumbar osteophytes.

Among the cases of neurological disease were four in which there was intracranial injury or neoplasm, two with meralgia paresthetica, and examples of Parkinsonism, myotonia, intercostal neuralgia, and syringomyelia. The pains, paresthesias, or deformities of the neurological disease were attributed variously to arthritis or neuritis, chiefly because a neurological examination had not been performed.

In the four cases of allergic disease there were transitory joint swellings in allergic individuals, resembling serum sickness, and associated with urticaria or angioneurotic edema. In one instance the symptoms followed the administration of penicillin.

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Neck and Shoulder Pain

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SUMMARY

Neck and shoulder pains are presenting or incidental symptoms in a large variety of conditions.

There may be similarities in the anatomico-physiological mechanism of pain production and in the clinical picture in many of these conditions.

Many of the vague and refractory cases of neck and shoulder pain and of migraine may be due to cervical disc disease.

Scalenus anticus syndrome and cardiac disease can be diagnosed or differentiated from cervical disc syndrome only by thorough investigation.

Proper treatment of neck and shoulder pain is dependent upon correct diagnosis through complete history, physical examination and laboratory tests, as described in this presentation.

IN the differential diagnosis of pain in the neck and shoulder, experience may be fallacious and judgment difficult. The pain may be simply an annoyance or a symptom of serious disease. Too often, because of inadequate examination and incomplete diagnosis, the patient receives everything from aspirin to balneotherapy, from colonic lavage to dental extraction, diathermy, diets, vitamins and/or operation. These patients wander from physician to physician, and often to cultists—and still the pain persists.

In some instances pain is present in one shoulder only; in others it may be bilateral or associated with neck pain on one or both sides. These multiple pains may be unrelated or they may result from the same underlying process. Opinion as to the frequency of various causes varies with the source of the opinion. The orthopedist, cardiologist, neurosurgeon and physician in general practice present different statistics.

SCALENUS ANTICUS SYNDROME

The syndrome of pain and altered sensation in the neck, shoulder, and C8-T1 dermatomes due to scalenus anticus hypertrophy and spasticity was described by Ochsner, Gage, and DeBakey²⁰ in 1934. These changes may be associated with vascular and vasomotor phenomena, and/or muscle weakness sometimes amounting to complete paralysis of the extensor muscles of fingers and wrist.

It is probable that any disease process of the cervical spine or shoulder region may produce secondary spasm of the scalenus anticus with resultant

compression of the subclavian and possibly brachial plexus, subclavian vein and sympathetic trunk. Elevation of the first rib resulting from this muscle spasm may further increase the pressure on these structures. Several interesting theories have been put forward to explain the muscle spasm, pain, and other symptoms. Todd³⁹ suggests that high fixation of the first rib due to inadequate descent of the sternum results in brachial plexus irritation; while Jones¹⁷ believes that the first rib compresses the dorsal nerves joining the lower cord of the brachial plexus. Aynesworth⁴ states that traumatic myositis is the chief factor in the production of spasm. Swank and Simeone³⁷ speak of an upper type in which there is pressure by the scalenus anticus tendons on the nerve roots of C5-6-7; and a lower type where there is a "squeeze" of C8 and T1 cords by the scalenus anticus and medius muscles. Gage¹² and his group support this last concept, basing their support on anatomical studies. However, Nachlas²⁷ and others feel that in most cases the scalenus anticus syndrome is secondary to cervical intervertebral disc abnormalities.

It is usually possible to differentiate clinically between the so-called upper and lower types of scalenus syndrome, as described by Swank and Simeone.³⁷ The more common lower type presents signs and symptoms due primarily to pressure on C8 and T1 roots and is characterized by the gradual onset of pain, muscle weakness and paresthesia. Mild to severe neck pain aggravated by pressure on the scalenus anticus is a constant finding; less commonly, pain along the medial-ulnar aspect of arm, forearm, hand, and ring and little fingers is present. Paresthesia, numbness, and diminished sensation to light touch and pin prick are found in the same regions. Weakness and atrophy of the intrinsic muscles of hand, ring and little fingers may be present. Sphygmomanometric readings show a diminution in arterial pulsations of the arm. Because obliteration of the radial pulse on turning the head to the affected side appears often in normal persons, this sign is not of diagnostic value.

The injection of novocain into the muscle usually relieves the spasm, pain, and other associated symptoms.¹⁸

The manifestations of the upper type of anticus syndrome are due to irritation of C6-7 roots with sudden severe weakness of the extensors of the wrist and fingers with paresthesia and reduced sensitivity of the thumb and index fingers, without pain or muscle spasm. Some patients do not have muscle weakness or sensory change, but muscle spasm and pain predominate in certain areas—namely, neck, tip of shoulder, posterior axillary fold, dorsum of upper arm, and extensor surface of the forearm.

Careful examination, and especially the novocain test, will differentiate between scalenus spasm, the syndromes described by Wright⁴⁶ (pectoralis minor pressure), by Falconer and Weddell¹⁰ (costoclavicular narrowing), and Raynaud's syndrome.

Irrespective of etiological concepts of the syndrome, conservative therapy is indicated and usually gives relief. Rest of the upper extremity, correction of poor posture,⁴⁰ change of occupation, massage, and novocain injection¹⁸ should be tried. Diathermy is recommended by Griffith.¹³ Nachlas²⁷ obtained relief for many patients by traction on the cervical spine by the use of either a halter or tongs. The authors have observed good results with this technique.

Scalenotomy, introduced by Naffziger²⁸ in 1934, is too often unsuccessful. It will not eliminate pain and paresthesia resulting from disc disease, but only that caused by vascular disorders due to compression of the subclavian artery by the spastic, hypertrophied muscle. Before scalenotomy is undertaken, disease of the intervertebral discs must be ruled out.³⁰

CERVICAL RIB

Lister was one of the first to excise a cervical rib. In 1905, the cervical rib syndrome was described by Murphy,²⁶ and in 1927 Adson and Coffey¹ relieved the pain and associated symptoms in this condition by scalenotomy.

Cervical rib, or elongated transverse process of C7 vertebra, the presence of which often is determined by routine roentgen examination, usually does not produce shoulder pain or other abnormal findings. In some cases there may be actual pressure by the cervical rib or enlarged transverse process on the brachial plexus and/or subclavian artery, producing a symptom-complex similar to that of scalenus syndrome.⁸ In these few cases, scalenotomy or excision of the rib may give relief, but this will be unavailing in cases in which symptoms are due primarily to disease of the discs.³⁰

CERVICAL DISC SYNDROME

Following the classical work of Schmorl, in 1928 Stookey³⁶ described cervical disc herniation, reporting six cases with cord compression and one with nerve root compression. Hawk¹⁴ in 1936 was able to find reports of only 36 such cases in the entire literature. However, in recent years, many cases have been reported. Saunders and Inman,³¹ in work on cadavers, found a high percentage with some degree of posterior herniation. The ratio of cervical disc herniation to lumbar disc herniation has been reported by Naffziger and Boldrey²⁸ at about 2.3:100. At Walter Reed General Hospital in a nine-month period, there were 143 herniated lumbar and 12 (8.3 per cent) cervical discs. The statistics of Raney³⁰ at Los Angeles County General Hospital favor the higher percentage.

The intervertebral disc in the cervical region is anatomically analogous to that in the lumbar region and is subject to the same changes. Although the

cervical discs support less weight and are subject to less trauma, they are narrower and more delicately constructed and are involved in a greater range of mobility.³⁸ As in the lumbar spine, herniations are most common at the level of greatest strain and through the weakest point in the annulus.²⁹ Discs 5 and 6 are usually involved with posterolateral herniations. Since the cervical canal is more nearly filled with nerve tissue than either the dorsal or lumbar region, even a small intraspinal mass causes earlier and more localized symptoms. The cervical root emerges from the dura to enter the intervertebral foramen at a right angle and lies immediately over the corresponding intervertebral disc. Thus the root may be compressed against the ligamentum flavum, pedicle, lamina, or facet by a posterolateral protrusion of the disc without involvement of the spinal cord.

Midline protrusions with pressure on the cervical cord present a picture likely to be confused with that of intraspinal neoplasms. In these cases the patients frequently give a history of minor trauma such as the sudden stopping of an automobile or a fall, followed by recurring neck stiffness, and pain in shoulders and arms aggravated by sudden movement of the head and neck. There is often tenderness over the spinous process at the level of protrusion, increased protein in the spinal fluid, and partial block as revealed by myelography. In this condition, prompt surgical operation is required. Of interest is another complication of disc displacement reported by Kahn,²¹ who presented three cases with the denticulate ligament traction and resultant damage to the lateral columns causing lateral sclerosis.

Posterolateral protrusion of the disc causing pressure on the cervical roots, without cord involvement, is being more frequently recognized as a cause of neck and shoulder pain. As has been said, this was formerly diagnosed as scalenus anticus syndrome, and scalenotomy was ineffective. Semmes and Murphy³³ have presented a clear description of this condition. Trauma is not an essential precursor. The usual history is that of stiffness of the neck and pain for months or years.⁹ The pain may be cervical, shoulder tip, between the scapulae, precordial, or across the chest.¹¹ It may be suboccipital and be diagnosed as "migraine."³⁰ Sudden extension of the neck, coughing, sneezing, or straining may aggravate the pain and produce an "electric shock" pain shooting into the little finger of the affected side. There may be numbness and paresthesia of the thumb, index, and middle finger which are more aggravating than the pain. Often the pain and paresthesia are made worse when the patient remains in one position for any length of time. Such a patient may have to get out of bed and walk about several times during the night in an effort to obtain relief. There may be associated vascular symptoms manifested by numbness, coldness, and blueness due to subclavian artery compression by the scalenus anticus, reflexly in spasm because of root irritation.

The patient usually holds the affected shoulder

elevated, and the head tilted forward or toward the unaffected side. There may be spinal tenderness at the site of the lesion; and percussion on the painful side, just lateral to the cervical spines, may reproduce the symptoms. Tilting the head and neck toward the painful side, "neck compression test," and pressure on the head will intensify the pain, whereas tilting away from the painful side, or traction, will relieve the symptoms. In many cases there are tenderness, weakness, or wasting of the pectoralis major, triceps, and extensors of the wrist and fingers. Roentgenograms will show a straightening of the involved region with absence of normal cervical lordosis, and diminution of intervertebral distance.⁴⁴ Oblique views may show narrowing of the intervertebral foramen with osteophyte formation. However, these findings are not pathognomonic. Myelography is advocated by most workers to verify the diagnosis.

In cervical disc herniation, with root compression only, conservative therapy in the form of halter traction may give permanent relief.³⁰ If the patient is comfortable in traction, but the pain recurs mildly when weight-bearing is resumed, Spurling³⁴ suggests a well-fitting cervical collar. Forcible manipulation in the presence of disc herniation is a dangerous procedure. There have been several recent reports of permanent damage to the cord due to manipulations. If there is pressure on the cord, or if the lesion is suspected of being a large one, or if pain and muscle spasm persist after several days of traction, operation is indicated. Recovery after operation is more complete and more rapid than for patients operated upon for lumbar disc herniation.

CERVICAL ARTHRITIS

Uncomplicated cervical arthritis is an uncommon cause of neck and shoulder pain. Of greater significance is nerve root pressure due to narrowed intervertebral foramina secondary to arthritis. These bony changes may be a generalized process due to old age or to rheumatoid arthritis, or, more commonly, to a local condition resulting from a damaged intervertebral disc. Keyes and Compere²² in 1932 described this latter condition and reproduced the lesions experimentally in dogs. Turner and Oppenheimer⁴² of Beirut in 1936 reported 50 such cases. Faulty posture may produce muscle-ligamentous strain in the cervical region⁴⁰ and predispose to chronic arthritis. The influence of local trauma and therapy has been discussed under cervical disc syndrome.

NEURITIS AND "RHEUMATISM"

For want of a better diagnosis, neck and shoulder pain is often labeled by the physician as neuritis, neuralgia, fibromyositis, or "rheumatism." The terms neuritis and neuronitis should be reserved for a specific entity of nerve inflammation due to trauma, toxic absorption, infection or metabolic disease. Pain and tenderness may be elicited along the course of nerves and the symptoms are not aggravated by head and neck motion. Brachial neu-

ritis may also occur secondary to cervical disc disease, osteoarthritis of the dorsal or cervical spine, scalenus anticus spasm or hypertrophy,¹⁹ cervical rib, or intraspinal lesions. Some of these conditions are considered elsewhere in this presentation. With "rheumatism" there is usually tenderness of the involved muscles as well as in other areas. Pain and the extent of disability are often difficult to evaluate and psychogenic possibilities must be considered. Elimination of focal infections is usually of little value. Salicylates, large doses of thiamin, massage, diathermy, or novocain infiltration sometimes gives relief. Work with poliomyelitis indicates that curare in oil³² or neostigmine²⁰ may prove of value in these cases.

BURSITIS

The most common cause of isolated shoulder pain is probably subacromial bursitis secondary to lesions of adjacent capsule, tendon or joint. Rupture or calcification of the supraspinatus tendon is often the primary lesion. Armstrong² collected reports of 89 such cases and described three cardinal signs: (1) a painful area between 60 and 120 degrees on abduction of the humerus, due to impingement of supraspinatus tendon of the covering bursa against the overlying acromium; (2) reversal of normal scapulohumeral rhythm due to reflex muscle spasm; (3) tenderness on deep pressure over the supraspinatus tendon. Toumey⁴¹ has pointed out that the pain is worse at night and may affect arm, scapular region, and neck. The pain may lead to disuse, adhesions, muscle atrophy, and limitation of movement. Codman⁷ believes that the bursa is more sensitive to pain than any of the surrounding structures. Surprisingly little is found at surgical operation in these cases even in the so-called "frozen" shoulder (periarthrititis, or tendinitis).⁴⁵

In most cases, bursitis, even with calcification in bursa or tendon, responds to conservative therapy.⁴⁵ This does not mean immobilization in abduction, which leads to adhesions. Heat, curare,²⁰ diathermy, regulated exercises, and roentgen therapy have their advocates. Novocain or saline infiltration, especially by the two-needle technique, should be tried. Manipulation under anesthesia or the hyperabduction treatment of Codman⁷ may be necessary for breaking down adhesions. Wilson⁴⁵ favors manipulation after procaine infiltration of the bursa, followed by diathermy. Large calcifications may necessitate excision. Armstrong² stated that one-third of his patients required acromionectomy, but this appears to the authors to be unwarranted except in a few selected cases. Stellate ganglion block often gives relief when other measures have failed.⁶

CORONARY INSUFFICIENCY

In coronary artery disease or in myocardial infarction, pain in the neck or in either shoulder may occur with or without substernal distress. The origin of pain in coronary insufficiency appears to be due to lack of oxygen in the heart muscle. In the usual case of angina pectoris or of myocardial infarction the source of the shoulder pain is obvious. A more

difficult problem is encountered when shoulder pain is the only symptom of coronary artery disease or when shoulder pain occurs as a sequel to myocardial infarction. In the former situation the true cause of the pain may not be suspected; and in the latter the relationship between the infarction and the subsequent shoulder disability is usually misinterpreted as being coincidental.

The exact route for cardiac pain impulses has not been established. Probably most of the impulses are transmitted by way of the middle and inferior cardiac nerves to the cervical ganglia, down the sympathetic chain through the white rami communicantes and dorsal roots to the cord levels of T1 to T4. These impulses are transmitted up the cord by the lateral spinothalamic tract of the opposite side to the thalamus and cortex. In the cord, perhaps in the substantia gelatinosa or possibly in the dorsal roots, the cardiac pain impulses are projected to the dermatomes of the related afferent somatic nerves. Areas represented by these dermatomes include the precordial and pectoral regions, the inner aspect of the left arm and forearm down to the tip of the little finger, and the ulnar side of the ring finger.

The most acceptable explanation of shoulder pain in these cases is that of overflow of impulses, or accessory visceral or somatic neurons. The existence of accessory pathways has been suggested by the studies of White,⁴³ and others. As Heinbecker¹⁵ pointed out, painful impulses may be carried from the cardiac plexuses by accessory afferent sympathetic fibers to the cervical cord and referred to the shoulder region to which the cord is linked through nerves. According to Miller,²⁵ accessory afferent somatic fibers may exist in the lower cervical nerves and gain entry into C8 and T1 segments of the cord; thereby, the shoulder is brought into relation with a common intraspinal zone for the mediation of cardiac pain. This bidirectional conduction explains the occasional bizarre transmission from the shoulder dermatome into the precordium and the possibility of simulating "angina pectoris" by stimulation anywhere along the course of the involved nerves. Leriche²³ reproduced precordial pain by electrical stimulation of the left stellate ganglion. Bauer⁵ goes so far as to state that certain cases reported as herniation of lower cervical discs simulating angina pectoris were true cases of angina pectoris. Imperati and his co-workers¹⁶ reported two such cases, ascribing the pain to cervical arthritis secondary to disc disease. Libman²⁴ wrote of "rebounds in the autonomic nervous system." He attributed shoulder pain following myocardial infarction to a "gouty state" resulting from lipoid metabolic disturbance and hepatic dysfunction which he considered basic in coronary artery disease and coronary thrombosis. Such a concept might explain the right shoulder, right hip, and ankle pain in several cases observed by the authors. Askey³ and others favor this explanation of local changes and a causalgia-like state.

In angina pectoris, shoulder pain,³⁴ which may be the sole symptom, is usually aching in character and

of short duration. It may be precipitated by undue exertion, excesses of eating or drinking, or emotional disturbances. It is relieved by the same measures which control substernal pain of angina pectoris.

Shoulder pain may occur simultaneously with myocardial infarction or it may appear days to weeks after the acute stage of the disease. Initially the pain may be severe, requiring sedation for relief; more commonly the patient will complain of distress only on abduction or internal rotation of the arm. In fact, the shoulder discomfort may be minimal and the clinician unaware of its presence unless the patient is carefully questioned. Pain and disability may persist for months, and the prognosis is uncertain, although outcome is favorable in the usual case. In cases reported by Askey the patients developed shoulder pain and involvement of the hands subsequent to myocardial infarction. The swelling, stiffness, and pain of the hands sometimes preceded the shoulder disability and usually persisted after the disability subsided. The causalgia-like mechanism might explain the phenomena in the hand, but it seems an inadequate explanation for the shoulder pain.

Treatment of this condition is difficult and recovery is usually spontaneous after weeks to months. Passive and active motion of the involved joints should be begun early. Physiotherapy and other usual treatments are of little value.

MISCELLANEOUS

In addition to the conditions discussed, shoulder pain may be produced by local processes or by involvement of the cervical or brachial plexuses, secondary to any of the following: Apical lung tumors (Pancoast syndrome), subclavian arterial aneurysm, tuberculosis of the cervical vertebrae, neurosyphilis, enlarged cervical or axillary lymph nodes, gout, and neurogenic arthropathy (Charcot's disease). Various traumatic lesions of the cervical spine and shoulder girdle may lead to shoulder disability. Referred visceral pain from disease of the gallbladder or diaphragmatic hernia should be considered. Too frequently, despite thorough investigation, the exact cause of the neck and shoulder pain cannot be determined.

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The "Nursing Crisis"

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SUMMARY

Three concrete proposals are made for the improvement of the present nursing situation:

1. *Make nursing education more easily available by holding the prerequisites to a minimum and concentrating upon the real essentials of nursing, granting the student the R.N. degree when she has completed this basic and essential training.*

2. *Utilize more fully the principles of group nursing as applied to "specializing" whether in the home or in the hospital.*

3. *Completely avoid the use of sub-standard nurses, while furnishing to the nurse such non-technical service (through the use of maid assistants or others) as shall make practicable the complete utilization of her skill and training.*

DESPITE the impressive and continuing advances in medical science, medical skill can be effective only insofar as it can be applied to its ultimate object, namely, the sick patient. In this application, the nurse plays an indispensable part. Without her effective cooperation the physician's task may be almost impossible. It is for this reason that the much bruited "nursing shortage" and "nursing crisis" merit most careful and most prayerful consideration.

The nursing profession has been the subject of much and increasing criticism, some of it perhaps justified but much of it grossly unjust. One of the sentiments most commonly expressed is, "The nurse nowadays doesn't really want to nurse; all she wants is a white-collar job. She likes to sit at a desk and be an administrator." Some critics also will say, "Why, in the old days you could get a nurse to work for 20 hours a day. Nowadays, a poor man has to hire three nurses for the 24-hour period, and pay each of them ten dollars or more." These criticisms, just or unjust, touch a very fundamental problem in the nursing situation, namely, the matter of so-called "increasing standards." By this is meant in part the increasing amount of preparatory work required for entrance to nursing school—in many schools one or two years of college and in some cases a bachelor's degree before the student can start her actual nursing training.¹ In addition, there must be considered the numerous lines of specialization opening up for the modern nurse, namely, supervisory work, administration, public health, industrial nursing, office nursing, nursing education, etc. It is perfectly understandable that a nurse who has entered nursing school after from two to four

years of preparatory college work, and who after graduation from nursing school has undertaken graduate work, should feel that her time could be occupied to better advantage than in the "toting of bed pans." The real difficulty here would appear to be not so much the amount of graduate training which a nurse may undertake following graduation from nursing school as the work preparatory to her entrance to nursing school, which is becoming increasingly voluminous and demanding.

A somewhat analogous situation appears to be developing in the medical profession where the old-style general practitioner finds himself more and more crowded by specialists and where the newer graduate shows less and less inclination to go into general practice.² The essential difference, however, between the medical and the nursing profession appears to be that, in general, specialization occurs after graduation from medical school and after the serving of an adequate internship. This, in essence, makes the young physician a "general practitioner" before he becomes a specialist.

Various solutions have been proposed for the present nursing difficulties. Many of these solutions appear to tend toward the development of a sub-standard nurse, whether she be called practical nurse, nurses' aide, or by other limiting terms. The author believes very strongly that this represents an actual down-grading of the nursing profession and that it is completely opposed to the objectives of those who have been attempting to up-grade the nursing profession by increase in preparatory training and theoretical work. In the author's opinion all nursing should be done by thoroughly qualified nurses, that is to say by registered nurses.

Fishbein,³ in 1944 wrote: "I remember many years ago the idea that was spread abroad in Chicago by Dr. John Dill Robertson, then Health Commissioner, that we were going to have two kinds of nurses: high-grade nurses, graduated from regular training schools, who would be working in the hospitals and taking care of surgical and obstetrical cases, and then a generally low-grade nurse who could be educated in six months and who would do all the rest of the nursing; both of them would be licensed nurses.

"Then it was discovered that the low-grade nurses would simply wipe out the higher type nurses. The mass of the six-months graduates would lower the whole level of nursing education so promptly that it would just about end high quality nursing."

It is perfectly true that in the past and perhaps even today, many tasks requiring no nursing skill whatsoever have been carried out by nurses. This, undoubtedly, is what is meant by the common phrase "carrying the bed pans." There does not

appear to be any valid reason why the nurse cannot have maid service available for this type of work. These maids, however, should be called exactly that: "maids"; they should not be called nor considered "practical nurses" or "nurses' aides," and they should not carry out any nursing procedures whatsoever.

It is perfectly true that present-day nursing procedures and modern advances in medicine require for their application a competent, alert and well-educated nurse. The question may be asked, however, "Is there any reason why the training in nursing school should not be of college or university grade, even if nursing students are accepted from the senior class of high school?" The university accepts high school seniors and finds them perfectly capable of carrying on advanced academic work. Why cannot a high school senior be accepted into nursing training, and after two or perhaps three years of training of college grade, be turned out as a well-educated and thoroughly competent nurse? Of these graduates, of course, some will wish to go on to "higher things." They may wish a bachelor's degree; they may wish to go into nursing education or other specialized fields. In such cases, as the candidates have behind them two or three years of work acknowledged to be of university grade, a longer or shorter period of graduate training should suffice for the attainment of all desired objectives.

In this connection, the following suggestion has been advanced by a correspondent of Claude W. Munger, M.D., professor of hospital administration at Columbia University:⁴ "Any high school graduate could be trained for good bedside nursing in 22 months. At the end of that period she should be graduated with the right to register as an R.N. Among a class of graduates there are always those with special aptitudes who should be encouraged to take one or two years of special postgraduate work leading to a degree such as M.N. (Master of Nursing) in the fields of public health, pediatrics, obstetrics, psychiatry, teaching, executive work, or operating room service."

Whatever one may think of the old-fashioned "will to work," the present trend toward shorter working hours and higher wages appears to be irreversible. There is, therefore, no hope for the return of the so-called 20-hour nurse, and this can hardly be otherwise than a blessing whether in disguise or not. As much as one may admire the faithful and at times heroic women who toiled the clock around, there can be no reasonable doubt that such conditions must often have militated against efficiency and accuracy in the care of the sick. If the nurse is to be a real human being, she must be allowed due time for rest, recreation and the humanities. Nevertheless, the case of the patient who could formerly afford to hire one nurse and is now unable to hire three nurses daily calls for solution. Group nursing, whether in the home or in the hospital, appears to provide the solution. It is only the very rare patient who requires continuous and unrelenting nursing care. An efficient

nurse, given the facilities, can usually care very effectively for two critically ill patients and for three patients not so critically ill.⁵ It is possible, thus, for the special nurse to care for three patients in this manner. The patient's expense for nursing care, even over a 24-hour period, is immediately reduced to the old standard of one nurse a day. Proper planning and a suitably organized visiting nurse service could undoubtedly do the same thing for the home patient.

In the hospital, definite administrative problems may be encountered with group nursing. These problems are beyond the scope of the present article, but are all capable of satisfactory solution.

There appears to be real reason for the belief that acceptance of nursing students direct from high school and concentration during the training period upon the real essentials of nursing would go far toward relieving the nursing shortage. Undoubtedly, many students now feel unable to go into the nursing field because of the increased requirements of time and money involved in the training, while others, having spent the required amount of time and money, feel entitled to the so-called white-collar job and the increase in financial returns available to the administrative nurse and the nurse educator.

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ADDENDUM

Since the above article was submitted for publication (April 1948) the views expressed therein have gained some acceptance in nursing education circles. Particular attention is called to: Fidler, N. D.: "The Canadian Nurses' Association's Demonstration School of Nursing," *Canadian Medical Association Journal*, 60:514-516 (May), 1949. Fidler outlines a project which is described as "a national experiment supported by two national associations" in which students from high school are to be given an intensive training for 25 months, which will eventuate in the R.N. degree. The work is to be of university grade and little or no time is to be spent in the routine care of hospital patients. The universities of Alberta, McGill, Queen's and Toronto have agreed to accept these R. N.'s for graduate work in their nursing schools. Under this system the training hospital, of course, would carry a heavier financial burden in that it would not be receiving free student-nurse services as at present. The author states in this connection, "Student nurses should not be expected to support the school, as in fact they have been doing, in large measure, through their services." This effort toward the streamlining of nursing education may well mark the beginning of a new and profitable trend.

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Potassium Permanganate Soaks in Peripheral Vascular Diseases to Emphasize Nail Growth Changes

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DISTURBANCES of nail growth have long been recognized as indicators of circulatory insufficiency in peripheral vascular diseases.^{1, 2, 4} Recently, Edwards³ again called attention to the various nail growth changes in arterial diseases. He emphasized the contrast between the old diseased nail and the newer more proximal portion as an indicator of circulatory improvement.

Nail growth change has been observed for this reason by the author for some time. It was found that the contrast was not great enough in a considerable number of cases, especially if the nails were slowgrowing, to be of appreciable clinical value. Furthermore, the differences between the individual nails were not clearly defined in many cases.

Potassium permanganate foot soaks were decided upon as a method of staining the nails. Staining the toenails has been carried out in a large number of cases (over 300 patients) and found to be very reliable. The observations resulting have been utilized along with other determinations, such as surface temperature and color changes, in evaluating the clinical status of the patient and the response to treatment.

All patients treated by the author for peripheral vascular diseases are given potassium permanganate foot soaks upon first consultation. Patients are directed to soak the feet in the solution at room temperature for 20 to 30 minutes daily for a period of seven to ten days. The nails are stained

a deep, even, black-brown color which persists for months. New nail growth from then on is strikingly contrasted and clearly outlined. Measurements of the rate of growth are facilitated and differences in rate of growth in the nails of the individual toes are revealed. The correlation between nail growth and other symptoms of arterial disease, such as pain, coldness and paresthesias, is great.

Two additional advantages are obtained with the potassium permanganate soaks:

(1) The new nail growth, or lack of it, is so clearly demonstrated to the patient that cooperation in carrying out hygienic foot measures and therapeutic procedures is more easily obtained.

(2) The routine use of potassium permanganate soaks is of practical therapeutic value in the treatment of ringworm infections, especially minimal infections, which would otherwise remain untreated.

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Food Handler's Infection (Swine Erysipelas) in Man

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SUMMARY

Swine erysipelas in man can at times be a serious and even fatal disease.

The usual cutaneous type runs a prolonged course when treated by any of the older methods.

Experimental and clinical evidence indicates that penicillin aids greatly in the treatment of the disease.

ERYSIPELOID of Rosenback (swine erysipelas) in man, long a common disease in Europe, is now being encountered more frequently in this country.¹¹ Cases of it are seen fairly often by industrial physicians who care for employees of large food processing plants and occasionally by physicians in private practice among patients working in a variety of industries.

As the disease may be serious or even fatal, although usually a fairly benign self-limited skin lesion, recognition and understanding of the infection is important.

Most of the literature on the subject is in periodicals which the industrial physician is not likely to encounter casually, such as journals of bacteriology, animal husbandry and dermatology.

The disease occurs most frequently in meat processors and in handlers of fish,⁵ especially shellfish. Often the organism enters through a puncture wound such as may be caused by the bite of a lobster or the prick of a bone spicule, or through an existing skin abrasion.

There have been large series of cases reported in other occupational groups, such as fertilizer manufacturers and button workers.⁸ In this latter group, many of those who had had contacts with the bone dust had severe bronchitis, the organism having entered through the bronchial mucous membrane. In these cases presence of the organism was not proved bacteriologically.

Although the organism is found on much of the food eaten by humans, only one case is reported in which entry was by way of the gastro-intestinal tract.² The patient supposedly got the disease from eating salt pork. Direct transmission from pigs to man is uncommon. Although there is no disease of fish known to be caused by *Erysipelothrix rhusiopathia*, the slime on the body of the fish seems to attract large numbers of the organisms.

It is now accepted that the erysipeloid of Rosenback and swine erysipelas in man are one and the

same, and that the disease is caused by *Erysipelothrix rhusiopathia*.¹⁰ This organism is a non-motile Gram-positive, microaerophilic rod which is found widespread on decomposing nitrogenous matter. It is usually saprophytic, but may easily become pathogenic. There are three strains of *Erysipelothrix rhusiopathia*: human, swine and mouse. The mouse strain is important mainly because it affords material for experimental evaluation of therapeutic agents.

In the infection in swine, there are three distinct clinical types of the disease which are quite common to man, and it is from these that most of the present knowledge has been gained. Cases of each of the three types have been reported in man. They are:

1. Acute fulminating septicemia, which in the past has been fatal to pigs in 80 per cent of cases. Two proven cases of septicemia in man, both fatal, have been carefully studied and completely reported.^{6,9} It is interesting that in the case reported by Klauder, the original skin lesion was at the site of incision for drainage. There is a distinct possibility that the organism thus entered the blood stream.

2. The subacute cardiac or polyarthritic type. This probably is an aftermath in patients who have survived the acute blood stream infection. The clinical course and findings are much like those of rheumatic fever in man, with valvular vegetations and joint changes.

3. The cutaneous type of "diamond skin disease" is the mildest and most common in both swine and man.

THE INFECTION IN MAN

The skin lesion in man is very similar in appearance to that of erysipelas, with an advancing, violaceous, slightly elevated border and lighter center.

It is distinguished by the fact that the center fades without desquamation. There are localized itching and burning but only occasional general symptoms and never suppuration except from secondary infection. The lesion is rarely seen above the wrists. There may be arthritic manifestations in the joints in the involved hand. If the patient is a food handler—90 per cent of them are—that helps to confirm the diagnosis. On blood smear the monocytes are usually found to be increased. Diagnosis can be made by culturing the organism from biopsy specimen from the skin, but in view of the serious consequences of bloodstream infection, this should not be undertaken lightly.

The cutaneous form of the disease is usually self-limited, lasting ten to 20 days, but it may recur over a period of months.

It is because the condition is to a large extent self-limited that evaluation of methods of treatment has been confusing. Statistics based on small series

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are of no value. Larger series reported upon before the use of penicillin¹ show an average duration of seven to 17 days, regardless of the type of treatment. Local measures such as x-ray, carbon dioxide snow, and ointments, as well as antisera and the sulfonamides, have been tried with no significant difference in results.

When the sulfonamides were introduced they were expected to solve the problem. Working experimentally with mice, Klauder⁷ concluded that they had only a "limited therapeutic effect." Mortality was 100 per cent in an untreated control group. The mortality rate was 85 per cent in a second group given a course of sulfonamide beginning immediately after inoculation of the organism. In a third group given sulfonamide therapy, both before and after inoculation, the mortality rate was 50 per cent. The results of Heilman and Herrell³ are spectacular in contrast. Forty infected mice were treated with penicillin and only two (5 per cent) died, whereas all 40 of the untreated mice died. These investigators had previously demonstrated the sensitivity of the organism to penicillin, *in vitro*.

Penicillin is especially effective in the treatment of the more serious (but rare) septicemia with generalized manifestations. In one case reported by Ehrlich¹ the patient had generalized bullae and high fever, probably on an anaphylactic basis. There was rapid response to massive, frequent doses of penicillin, with eventual complete recovery.

Results in three cases reported in succeeding paragraphs indicate that penicillin may help in shortening the course of even the mild cutaneous type. As the patients were treated during a period when penicillin was just coming into general use, the reports indicate the better results obtained with increasing the dosage of the drug as it became more readily available.

CASE REPORTS

CASE 1.—The patient received a puncture wound on the left thumb while cleaning fish in January 1945. A rash appeared at the site and he sought medical advice four days later. Local compresses were used over a two-week period with gradual subsidence of symptoms. A week or so later, however, there was recurrence of the skin rash on the thumb and extending to the dorsum of the hand. Compresses were started immediately and on the third day 50,000 units of penicillin in normal saline were given intramuscularly. This was repeated 48 hours later. The rash faded and the patient was discharged two days later. There has been no recurrence. The whole course of the disease lasted a month.

CASE 2.—The patient was scratched on the dorsum of the right hand by a crab shell in October 1945. He was first seen at the office two days later. A glycerin and alcohol compress was applied to the hand and 100,000 units of penicillin were given daily for four days. The patient was discharged on the fifth day and there has been no recurrence.

CASE 3.—The patient was first seen in the office October 20, 1947. Two days before he had received a puncture wound on the flexor surface of the right little finger from a fish bone. There was tenderness on motion of the finger,

causing suspicion of tendon sheath involvement. The patient was sent immediately to the hospital where 100,000 units of penicillin was given as an initial dose, and then 30,000 units every three hours for 36 hours. He insisted on leaving the hospital at the end of 44 hours. There has been no recurrence. At no time did the patient have fever or other general symptoms. At the time of hospitalization, leukocytes numbered 7,800 with a normal differential save for a slightly increased monocyte count.

COMMENT

In none of these cases was any attempt made to culture the organism, but the skin lesion in each was quite characteristic and there could be no doubt as to the clinical diagnosis. All were fish handlers. It should be added that all food handlers who come under the author's care for puncture wounds or abrasions receive a prophylactic injection of tetanus antitoxin. The patient in Case 1 could well have had spontaneous recovery coincidental with the administration of the penicillin. It is difficult to believe that two small doses of penicillin 48 hours apart could have altered the course of the disease to any marked degree.

However, as the patient in Case 2 was seen earlier in the course of the disease and treated more intensively, it is reasonable to believe that penicillin may have played a part in the rapid recovery. By present standards the dosage given was woefully inadequate.

The third patient had large and frequent doses and recovery was rapid and complete.

Discussion by J. MINTON MEHERIN, M.D., San Francisco

Swine erysipelas in man, although not uncommonly encountered, is commonly not recognized. With the universal use of penicillin for most types of infection the lack of recognition may not be of such great importance unless the possible seriousness of the infection is entirely overlooked and it is treated by local and ineffective measures. An understanding of the lesion may be of value in prevention of it. Workers exposed to the organism should be instructed to scrub their hands with soap and water whenever they suffer an abrasion, laceration or a puncture wound. The time consumed may be repaid many times.

All of the cases that I have seen have been in handlers of raw shellfish. In most cases the infection started in minor breaks in the skin about the fingernails. Before the advent of penicillin, I was convinced that the progress of the lesion was definitely impeded by the use of the sulfonamides. A colleague treating a similar group of patients thought that the drug had no effect on the condition. A recent case which had been neglected for five days cleared up satisfactorily in 48 hours with two injections of 300,000 units of penicillin in wax. I have never seen a case of septicemia from this organism.

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CASE REPORTS

- ◄ Carcinoma of the Rectum Complicating Pregnancy
- ◄ Asymptomatic Aneurysmal Dilatation of a Right-sided Aortic Arch
- ◄ Thorn in Body Causing Abscess After Twenty-one Years

Carcinoma of the Rectum Complicating Pregnancy

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CARCINOMA of the rectum complicating pregnancy is comparatively uncommon, although it is quite probable that this condition occurs more frequently than the paucity of the reports in the literature would indicate.

Modern texts on obstetrics give little information concerning this particular complication of pregnancy.

In 1947, Bacon and Rowe² made a thorough study of this subject in regard to methods of treatment. They were able to collect reports of 70 authentically proven cases and added four of their own. For the management of this complication they suggested the following procedures, with which the author is in accord:

"... (a) in early pregnancy (3 months or less) abdominoperineal proctosigmoidectomy without colostomy and with preservation of the sphincter musculature, or as a second choice, a Miles abdominoperineal extirpation, especially when the lesion is less than 6 cm. from the anal margin, and with relative disregard to the pregnancy; (b) in the second trimester where the fetus is not viable and the size of the uterus would necessarily interfere with the removal of the growth, Porro section and resection simultaneously, if the condition of the patient warrants such a procedure; (c) in the last trimester of pregnancy, cesarean section and hysterectomy followed by removal of the cancerous bowel two to four weeks later. Where the circumstances are ideal and the condition of the patient excellent, radical resection performed at the time of section may be justifiable."

Adair¹ believes that it is best to interrupt the pregnancy as soon as possible after the diagnosis is made if there is any possibility of cure. Stander³ is of the opinion that the pregnancy should be disregarded in the presence of carcinoma of the rectum, except in the last two months.

The following case of carcinoma of the rectum with almost complete obstruction complicating pregnancy (five months) was observed recently.

CASE REPORT

The patient, a white woman 34 years of age, when first observed on February 27, 1948, complained of bleeding from the rectum over a period of two years. Definite changes in the frequency and character of stools had been noted periodically for about the same length of time. For the past ten months the diarrhea and bleeding had increased in amount and severity, and this had been accompanied by a loss of ten pounds in weight, anorexia, and generalized fatigue. The patient had an 11-month-old baby and was about five months pregnant on admission. She had three other children, living and well (ages 7, 5, and 3). The past history included no operations or serious illnesses. Family history disclosed no record of cancer.

Presented before the Buffalo, New York, Obstetrical & Gynecological Society, April 6, 1948.

The patient was thin, anemic, and moderately dehydrated. The size of the uterus indicated a pregnancy of about five months; otherwise, the abdominal examination was not remarkable. Digital examination disclosed a hard, annular, constricting tumefaction, five centimeters from the anorectal junction, invading the perirectal fat and fixed by malignant extension. Proctosigmoidoscopy revealed a typical ulcerating carcinomatous lesion with deep infiltration which narrowed the lumen sufficiently to preclude advancement of the instrument. A biopsy specimen taken from the lesion was reported "adenocarcinoma, grade II." An interesting point to consider here is that the patient had had a normal pregnancy and delivery without an investigation of the terminal intestinal tract during either the prenatal or postpartal periods notwithstanding the presence of the characteristic symptoms of carcinoma of the rectum, which had existed for two years. Considering the magnitude of the lesion, there can be little doubt that it had been present for at least a year, because this type of tumefaction usually requires about 12 months to encircle the lumen of the bowel. From this it can be concluded that the tumor was undoubtedly present during the previous pregnancy.

Laboratory findings were as follows: Hemoglobin, 7.9 gm. per 100 cc. (a value of 55 per cent); erythrocytes, 3,060,000; leukocytes, 8,500; packed red cells made up 32 per cent of the whole blood; serum albumin, 2.47 gm. and serum globulin 2.16 gm. Results of urinalysis were within normal limits. A roentgenogram of the chest was negative for lung metastases.

The lesion was considered, technically, as inoperable (Group II) due to the invasiveness and fixation of the tumor. The patient was admitted to the hospital and was immediately started on a course of x-ray therapy in the hope that the tumor would be radiosensitive and that what was thought clinically to be a nonresectable lesion could be made amenable to surgical removal. A further aim was to terminate gestation.

After receiving an intensive course of external radiation (4,000 r), the patient was examined again on March 23, 1948. Rectal examination at this time disclosed very little regression in the tumor. The fixation by malignant extension was such that it ruled out resection. The lesion was still annular, showing marked constriction, causing a high degree of obstruction, and colostomy (sigmoid) was recommended as soon as the patient was able to undergo operation.

As a result of radiation there had been no fetal heart tones or movements for a period of ten days and the gynecological consultant advised therapeutic emptying of the uterus by means of a transabdominal hysterectomy at the time of colostomy, because the size of the pelvic mass made it impossible to deliver vaginally even a small fetus.

On March 30, 1948, Porro-cesarean section and loop colostomy (sigmoid) were performed. Findings at operation confirmed preoperative observations in that the lesion was fixed, infiltrative and involved the entire lower pelvis, retroperitoneal nodes, iliac nodes and aortic nodes. The abdomen was moderately distended and some jaundice developed during the first postoperative week, but after the colostomy began

to function, the patient's general condition improved and she was out of bed on the 15th postoperative day. The patient was discharged on the 45th postoperative day.

SUMMARY

A case of carcinoma of the rectum complicating pregnancy is reported and the salient features of the case are presented. This is the 75th case of its kind on record.

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Asymptomatic Aneurysmal Dilatation of a Right-sided Aortic Arch

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THE persistence of the right fourth aortic arch with complete or partial obliteration of the left fourth arch resulting in a right-sided aorta is a fairly uncommon congenital anomaly. Rarer still are the cases in which the descending aorta actually enters the right lung field. The case here presented is one of asymptomatic aneurysmal dilatation of a right-sided aortic arch with a persistent diverticulum of the left aortic arch. It is reported both because of the rarity of the condition and because of the marked dilatation and sclerosis which so well demonstrated the anatomic variation without the use of contrast media.

CASE REPORT

The patient, a 79-year-old white female, entered the San Joaquin General Hospital with a diagnosis of possible right pneumothorax. The patient had been in this hospital several

From the San Joaquin General Hospital.

times for such complaints as a mild cerebrovascular accident, and for epistaxis. There never had been any previous radiographic examination. The complaints on this entry were no more than those expected of a patient with mildly decompensated arteriosclerotic heart. On direct specific questioning after the diagnosis had been made, she denied any symptoms that could be ascribed to the existing condition. Physical examination as far as the abnormality was concerned revealed only a slight dullness to the right of the sternum.

The initial single posterior-anterior film (Figure 1) presented for interpretation showed a large homogenous mass occupying about half of the right hemithorax. This mass was convex outwardly, sharply demarcated, extending from the region of the arch of the aorta out into the lung field to within 2.5 centimeters of the right lateral chest wall, and then curved downward and medially crossing the diaphragm in the region of the right cardiophrenic angle. On the medial aspect of the mass was an area of radiolucency which separated this border from the right cardiac contour. The superior medial border of this mass could be followed to the left across the midline where it was continuous with a shadow of vascular density which was slightly higher than the usual location of the aortic knob. This shadow to the left of the midline did not have the expected shape of an aortic knob and its outer left border was continuous upward with the left side of the superior vascular shadow. There was no descending aorta shadow on the left. The trachea deviated slightly to the left in the superior mediastinal area. At this time it was felt that the most likely diagnosis was aneurysm of a right-sided aorta, and to corroborate this impression fluoroscopic examination and esophageal visualization with barium were carried out.

Fluoroscopic examination showed pulsation of the vascular shadow in the region of the knob and also of the large mass in the right hemithorax. These pulsations were expansive in character and followed in rapid sequence the apex beat. The remainder of the findings can be described and demonstrated in the views taken with barium outlining the esophagus. As seen in the posterior-anterior film (Figure 1) there is a 2.5 centimeter displacement of the esophagus to the left of the midline in the region of the aortic knob,

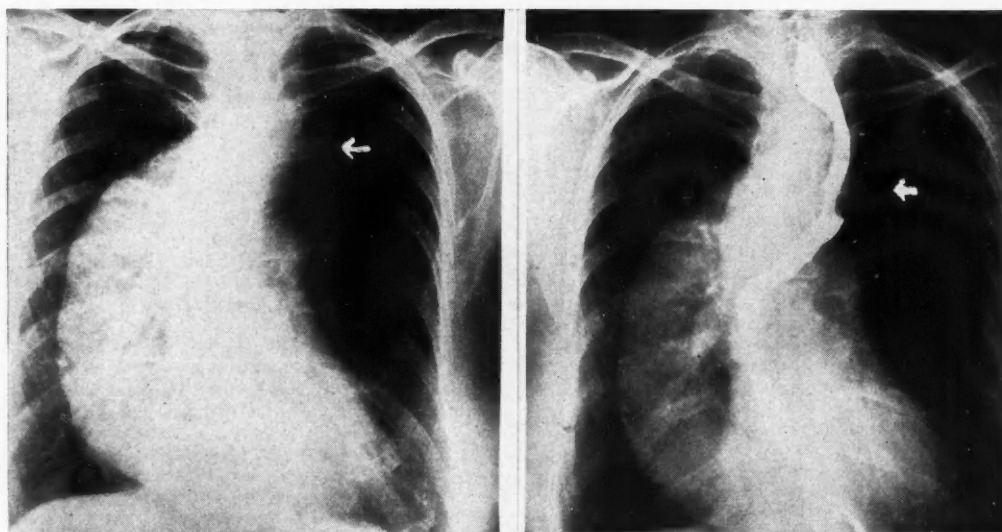


Figure 1.—Left—Posterior-anterior view. The right sided position of the descending aorta is demonstrated. Arrow points to aortic knob. Right—Posterior-anterior with barium-filled esophagus. The displacements of the esophagus by the aorta are seen. Arrow points to aortic knob extending to left of esophagus.

but part of the vascular shadow falls to the left of the displaced esophagus. This region of esophageal curve is made up of two fairly hemispherical arcs. The upper arc measures about 4.5 centimeters and the lower about 2.5 centimeters. The esophagus then swings to the right and is in close approximation to the left side of the aorta in its abnormal course through the right lung field. It then crosses the midline at the elevation of the 11th thoracic vertebra and enters the abdominal cavity in the normal position to the left of the midline. There were several sections of the esophagus which showed some delay in the passage of the barium, but these delays were easily overcome by the administration of another small amount. The aorta was 6 centimeters wide in the region of the arch and 7 centimeters in width throughout its descending course.

In the right anterior oblique projection (Figure 2, *left*) the expected abnormal cloudiness of the upper part of the mediastinum and the lateral and posterior course of the descending aorta were well visualized. An anterior displacement of the trachea in the upper part of the chest was noted, and separation of the esophagus from the spine in the region of the arch, by a gap 6 centimeters wide, was visualized. The contour of the esophagus in this region was again that of a double arc with a total diameter of 6 centimeters. The barium column followed the inner border of the aorta into the right lung, and the width of the aorta varied between 6 and 7 centimeters throughout the descending course. The pulmonary artery was visualized end on, just inferior to the arc formed by the esophagus.

The left anterior oblique film (Figure 2, *right*) showed the aorta and the cardiac shadow superimposed due to the abnormal course of the aorta. The posterior aspect of the esophagus at the level of the sixth thoracic vertebra had a hemispherical defect with an arc of 2.5 centimeters.

The lateral view (Figure 3) added nothing but showed the marked anterior displacement of the barium-filled esophagus with the doubled curved defect.

COMMENT

The embryology of the development of the aortic arches into the final adult structure and the multiplicity of abnor-

malities which can result from any disturbance during the period of growth have been completely described in other papers. In this presentation the changes which result in the abnormality reported will be briefly considered.

In the usual development the left fourth arch persists in its entirety and with the left portion of the ventral and dorsal embryonic aorta forms the adult left sided aorta.



Figure 3.—Lateral view showing anterior displacement of esophagus and trachea.



Figure 2.—*Left*—RAO, with barium-filled esophagus. The entire course of the aorta is outlined (usually seen in LAO). Arrow 1, aortic knob. Arrow 2, aortic diverticulum. Arrow 3, descending aorta. *Right*—LAO, demonstrating hairpin bend of aorta (reversal of normal). Arrow 1, descending aorta. Arrow 2, aortic diverticulum.

When in the course of growth there is some interference in the development of the left aortic channel and this upset is early enough so that the right fourth arch has not yet developed into the innominate and subclavian, this right fourth arch will take over the function of the left fourth arch and, with the right portion of the ventral and dorsal embryonic aorta, will form the adult aorta.

Interference with development of the left arch may take place anywhere along its course, and if the interference is such that the aortic root persists, with disappearance of the dorsal part of the embryonic arch to the origin of the ductus arteriosus, the result is a posterior diverticulum from which the left subclavian arises.

With the essential embryological changes in mind, the unusual roentgenographic findings noted in the case reported are more clearly understandable. The elevation of the aortic arch noted in the posterior-anterior view was due to the fact that the right main bronchus lay higher than the left. The right ascending aorta hooked up over the right bronchus before swinging to the left and therefore had to ascend higher than does a normal left aorta.

The absence of a descending vascular shadow on the left of the spine in the frontal projection and the clearance of the spine in the left oblique were both explainable on the basis of the descending aorta's course to the right.

The displacements of the barium-filled esophagus in the

region of the aortic arch were due to the right and posterior position of the aorta. From a study of the type of arcs and measurements of the radii of them, the authors have concluded that the main anterior displacement was due to the arch and the dilated first part of the descending aorta and the displacement to the left was due to the descending aorta. In both of these displacements the impression of the diverticulum was visible on the filled esophagus.

The presence of the descending aorta in the right lung field was no more than would be expected in marked dilatation and elongation of an aorta falling to the right of the spine.

The aortic knob is usually absent in a right-sided aorta, and, when present, is probably due to a prominent diverticulum or an enlarged left subclavian artery. Upon studying the knob present in the case reported, it was noted that it was large and measurements led to the conclusion that it was a portion of the aortic arch which had been displaced to the left by the elongation and dilatation of the aorta.

SUMMARY

An unusual case of aneurysmal dilatation of a right-sided aorta and a brief review of its embryological aspects have been presented. In spite of the pronounced dilatation no definite symptoms were produced.

425 North California.

Thorn in Body Causing Abscess After Twenty-one Years

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THE following case is reported because of the unusually long harboring and the ultimate spontaneous expulsion of a foreign body.

A 34-year-old veteran was first seen by the authors in August, 1947, at which time he was given pneumoperitoneum for pulmonary tuberculosis. While overseas in the army he had been hospitalized in Hawaii with the diagnosis of pulmonary tuberculosis and had been further hospitalized in San Fernando.

On January 14, 1948, he first complained of a swelling in an old scarred area on the medial aspect of the right leg about eight inches below the patella. Examination revealed a fluctuant, slightly tender mass about the size of an almond. Under 1 per cent procaine anesthesia an incision was made over this mass and approximately 4 cc. of seropurulent fluid escaped. A dry dressing was applied and the patient was instructed to apply hot compresses at home. Forty-eight hours later when the dressing was removed the pointed end of a foreign body was observed protruding from the incision. Removed, it was found to be a thorn three-quarters of an inch in length. Following removal of the foreign body all drainage ceased and the incision healed in a few days.

At this time the patient recalled the following facts: At

the age of thirteen, 21 years previously, on a Halloween night he had fallen into a hawthorn bush, spraining the left knee and running a thorn into the knee above the patella. He had much difficulty in walking. At the time part of the thorn was pulled out but the remainder could not be withdrawn. The next morning he went to a physician who poulticed the knee with flax, and this treatment was continued daily for four months. The leg continued to swell. Movement was very painful and it was springtime before the patient was ambulatory. At one time an abscess apparently pointed just lateral to the patella, but this was never incised and it regressed spontaneously after heat from grass lanterns had been applied, and the leg improved thereafter. In 1941, 15 years later, the patient joined the Army and went through several campaigns. In October, 1941, an abscess the size of a small egg pointed about eight inches below the patella on the medial aspect of the tibia. This was lanced and drained for about one week and then healed spontaneously. The patient returned to duty and went through the Aleutian campaign and then to the South Pacific with no symptoms. In 1944 he was hospitalized for tuberculosis. There were no symptoms referable to the leg until January, 1948. The thorn had been in the body for 21 years and three months and had migrated in the leg for a distance of almost 12 inches.

SUMMARY

A foreign body apparently present for 21 years was the causative factor of a chronic, recurring abscess.

490 Post Street.

MEDICAL PROGRESS:**Recent Advances in Cardiovascular Surgery**FRANK GERBODE, M.D., *San Francisco*

VASCULAR surgery has a rich heritage in America, having been founded on the fundamental observations of Carrel, Guthrie, Halsted, Matas, and others many years ago. Although progress has been steady, it is not surprising that great strides in the past decade were made possible by the improvements in anesthesia, a better understanding of the physiology of thoracic surgery, and technical improvements in the management of suture anastomosis of great vessels. As one looks at the broad field of cardiovascular surgery, one striking fact is apparent: none of the advances could have been achieved without animal experimentation.

Much has been accomplished through the development of the anticoagulants heparin and dicoumarol, the extension of sympathetic nervous system surgery, and in the management of aneurysms and arteriovenous fistulas, but space does not permit a review of these subjects. For reasons of brevity, attention will be directed toward recent progress in operations for portal hypertension and on the heart and adjacent great vessels.

Portacaval Shunts for Portal Hypertension

It has long been known that severe gastrointestinal hemorrhage can result from esophageal varices caused by chronic obstruction in the portal circulation. Whipple's report in 1945 renewed interest in the possibility of surgical treatment of this condition.⁵⁷ The problem was taken up by Blakemore^{58, 6} and, subsequently, by Linton.⁴¹ Four types of venous shunts are now being used to relieve the portal hypertension resulting from intrahepatic and extrahepatic obstructions: splenectomy, nephrectomy, and end-to-end anastomosis between the splenic vein and renal vein; anastomosis between the distal end of the portal vein, after its division, and the inferior vena cava; and side-to-side anastomosis between the portal vein and inferior vena cava. Of these procedures the end-to-end anastomosis between the renal and splenic veins is the least desirable because it requires nephrectomy; the side-to-side portal vein-inferior vena cava shunt would appear to be the most satisfactory. Linton recently has reported several apparently successful anastomoses between tributaries of the portal vein and the inferior vena cava.⁴¹

It seems clear that splenectomy alone for extrahepatic block (Banti's syndrome) will relieve only those patients in whom the site of obstruction is distal to the junction of the coronary vein. In this group the immediate results of portacaval shunts

have been quite encouraging, particularly in those patients who have good hepatic function.

Blakemore has this to say in regard to patients with portal hypertension due to cirrhosis: "... we consider the procedure no longer an experimental operation but commend its consideration in cases of cirrhosis when patients have had one or more episodes of gastrointestinal hemorrhage—patients who when treated medically under the best of circumstances have only a 50 per cent chance of living."⁷⁷ In the presence of ascites, when vigorous medical treatment has resulted in improvement, and roentgenograms have demonstrated the presence of esophageal varices, Blakemore recommends a portacaval shunt, and states that such patients are among the most grateful for the relief obtained by the operation. He has reported a series of 58 cases in which various types of shunt were performed between the portal circulation and inferior vena cava. There were 11 postoperative deaths. The majority of the survivors were benefited by the operation.

Wounds of the Heart

During the past two decades a great many valuable observations have been made on contused and penetrating wounds of the heart, with a gain in knowledge and experience of great value in the management of patients with such injuries. It is now known that moderate blows and compression injuries to the heart are fairly well tolerated when treated on a regimen similar to that used for coronary occlusion. It has also been shown that many small puncture wounds, such as those produced by ice picks and hat pins, require no operative treatment, or at most aspiration of the pericardial sac. In fact, aspiration is recommended by a number of observers, notably Streider,⁵³ Singleton,⁵² and Blalock and Ravitch,¹⁰ whenever there is evidence of slow filling of the pericardial sac following a wound of the heart. On the other hand, when there is evidence of rapid filling of the pericardial sac (elevated venous pressure, low arterial pressure, diminished cardiac pulsation, and a quiet heart)^{1, 13} a relatively large laceration of the heart or coronary vessels should be suspected and early operation is indicated to evacuate the clot and suture the laceration.

Although experimental evidence indicates that retained foreign bodies in or near the heart may cause few cardiac disturbances,²² there is a growing belief that they usually should be removed. This attitude was further supported by Harken and his associates, who during World War II achieved the amazing record of removing 134 missiles from the region of the heart and great vessels without an

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operative death.³⁴ In this group there were 13 cases in which foreign bodies were recovered from various chambers of the heart.

Constrictive Pericarditis (Scar Compression of the Heart)

Although this disease was recognized in the seventeenth century, it is usually called Pick's disease because of the excellent description of it by Pick in 1896.⁴⁰ There are a number of etiologic agents, but tuberculosis is the most important and frequent cause. It is generally considered that rheumatic fever is not a common cause of the constrictive type of pericarditis.

Characteristically, the dense adherent scar limits diastolic filling of the heart, reduces cardiac output, and thereby causes the profound disturbances which occur in the circulatory physiology. Scar tissue involvement of the superior and inferior venae cavae also prevents the normal flow of blood into the heart, and, as a consequence, venous pressures as high as 400 mm. of water have been recorded. Distention of the neck veins becomes evident. Venous congestion eventually causes enlargement of the liver, ascites, occasional pleural effusion, and edema of the lower extremities. It is quite understandable that this disease is often mistaken for cirrhosis of the liver.

The heart is usually small, but may appear to be normal or enlarged because of the thickness of the pericardium. There is a lack of pulsation which can be demonstrated in kymograms and by fluoroscopic examination. The heart sounds are quiet, and there is usually a paradoxical pulse.

Surgical relief for this condition was first accomplished by German and French surgeons; in this country Churchill is given credit for being the first to perform a successful pericardiectomy.¹⁴ Since then numerous surgeons have reported their experiences,^{1, 9, 36, 38} and there has been a steady decrease in operative mortality. It has been stated erroneously that it is necessary only to remove a window over the anterior portion of the heart for relief of the constriction. Beck¹ and Holman³⁸ have shown that the best results follow complete removal of the anterior pericardium, combined with excision of the scar from the cavae. To visualize this whole operative area, Holman advocates an approach through a median sternotomy. In competent hands, the great majority of patients subjected to this type of operation are cured or considerably improved.

Defects in Cardiac Septa

Certain interventricular and interauricular septal defects, when not associated with other congenital malformations, are now being contemplated as lesions suitable for operative correction. When small they are frequently asymptomatic and of little significance. Large defects, however, can produce symptoms and may be the cause of cyanosis. Murray,⁴² who has closed a number of these openings in patients, has this to say about operative intervention in septal defects: "The cases to be consid-

ered for operation in my view are those in which the heart is not excessively enlarged; the septal defect is not too large, such as occurs with a single ventricle, and before the patient has reached maturity. On the other hand they may not be suitable for operation when there is evidence of an enormously enlarged heart with failure and perhaps a single ventricle instead of a medium-sized defect in the septum."

The interventricular defects were closed by passing a strip of fascia lata anteroposteriorly through the heart at the level of the opening, forming a bridge across the defect. The interauricular defect was closed by approximating the margins of the opening with sutures passed through both walls of the auricle. Five patients were operated upon, with one postoperative death. These procedures must still be considered in the investigative phase, but they demonstrate that the heart will tolerate this type of operation, and eventually these or similar methods may be used by cardiac surgeons.

Intracardiac Surgery

A renewed interest has developed in intracardiac surgery during the past few years. Cutler in 1925 demonstrated that a stenotic mitral valve could be resected blindly,¹⁷ but the results were so disappointing that the work was dropped.¹⁸ This approach to the treatment of valvular stenosis can be criticized on the basis that substitution of valvular incompetency for stenosis may only replace one type of poorly tolerated defect with another.

A totally new approach is offered by Gross and his associates, who have been constructing experimental extracardiac shunts with homologous blood vessel and valve grafts, although only partial success has followed this procedure in experimental animals.³²

Harken recently tried to alleviate the pulmonary hypertension of mitral stenosis by creating an interatrial septal defect in two patients. In two other patients "mitral valvuloplasty" was performed, with one death. To quote from Harken: "These cases are now reported only to indicate the ability of such patients to withstand operations. The evaluation of any long-term benefits attributable to these procedures—and, indeed, of the ultimate position of mitral stenosis—must rest on objective criteria gained from hemodynamic studies carried out before and after operation. Subjective selection of patients and assessment of results lead to dangerous competitive exercises in surgical techniques rather than to fundamental advances in therapy."³⁵

Myocardial Ischemia

In spite of a great deal of painstaking experimental work and much clinical investigation, surgeons are still unable to be of much assistance in the relief of coronary artery disease. Two avenues of attack have been pursued: methods of relieving pain and vasospasm in angina pectoris, and the development of an extracardiac collateral blood supply.

Franck²¹ (1899) is given the credit for being the

first to suggest sympathectomy for angina pectoris; but this suggestion was not tried clinically until 1916 by Jonnesco⁴⁰ who performed a bilateral cervical sympathectomy, including the removal of the stellate ganglion. Good and bad results have followed various modifications of this original operation. At present, Goetz²⁴ believes in resection of the upper four or five posterior roots, while White and Smithwick recommend resection of the upper three thoracic sympathetic ganglia.⁵⁸ In patients who are satisfactory operative risks the relief from pain obtained by these operations is beneficial; other non-painful sensations evidently take over the function of warning the patient that he is straining his heart.

Although the omental and pectoral muscle grafts to the heart, suggested and tried by Beck²⁶ and O'Shaughnessy^{44, 45} appeared to offer some hope in the treatment of myocardial ischemia, clinical trial has not been on a broad enough scale to evaluate the methods. More recently, Beck^{2, 3} showed experimentally that a blood vessel graft could be used to carry arterial blood from the aorta to the coronary sinus, and thus prevent death from ligation of the coronary artery. At the moment this operation is not ready for clinical application. It evidently demonstrates that, in the heart at least, blood can be made to reverse its direction of flow through the capillary bed and be effective. Also still in the experimental stage is Murray's⁴³ work on myocardial infarcts, in which he showed a better survival rate in the group of animals which had resection of the infarcted cardiac muscle than in those which had no resection.

Patent Ductus Arteriosus

Approximately seven out of ten patients with an open ductus arteriosus will not survive to the age of 40. In 30 per cent death is due to cardiac failure and, according to Shapiro and Keys,⁵¹ 40 per cent die of acute bacterial endarteritis. A few deaths occur from rupture of the ductus or the pulmonary artery.

Surgical closure of the ductus has been accomplished by many surgeons since the first successful ligation in 1938 by Gross and Hubbard,²⁹ and it may now be stated that in competent hands the operative mortality rate is less than 5 per cent. While ligation in continuity with two or more ligatures is commonly employed, it would appear that this method is followed by a 20 per cent incidence of recanalization. Owing to this, Gross now divides the ductus between clamps and sutures the cut ends.^{25, 26} There is no question that division is the best surgical procedure, but it is often difficult to obtain enough length in the ductus of an adult to use the method safely. Jones recently reported his experiences with ligation and division and showed that even though ligation is the simpler procedure it can be followed by serious complications.³⁹ Touroff^{55, 56} prefers ligation to division when there is evidence of endarteritis; in such circumstances the tissues are often friable and are more difficult to

suture than to ligate. Surgical closure of the ductus is best done during childhood before endarteritis and cardiac failure have occurred.

Congenital Aortic Anomalies

Current interest in the surgical treatment of coarctation of the aorta is responsible for its being recognized more frequently than it was in the past. It occurs at least four times more often in males than in females.³³ The aorta is usually constricted just beyond the left subclavian artery, producing hypertension in the upper body and hypotension in the lower extremities. The femoral pulses are weak or absent. Due to the enlargement and vigorous pulsation of the intercostal vessels the lower borders of the ribs may become scalloped.⁵⁰ A high degree of hypertrophy of the left ventricle may develop from the increased effort required to propel the blood through the collateral bed. Hamilton and Abbott state that 75 per cent of patients with coarctation of the aorta die of cardiac failure before the age of 40.³³

The first successful operations were done by Crafoord and Nylin¹⁶ in 1944 and Gross and Hufnagel³⁰ in 1945. In both instances the stenosed area of the aorta was resected and end-to-end suture accomplished. Since then a number of surgeons have reported their experiences, with an average mortality rate of about 15 per cent.^{4, 15, 27} Gross recently reported that in a number of instances he had used a homologous blood vessel graft to bridge a defect in the thoracic aorta after resection of a coarctation.³¹ Although the early report is favorable, the eventual fate of homologous grafts is yet to be determined.

The aortic arch may be the site of other congenital malformations which cause pressure on the trachea and esophagus. Two general types are recognized: (1) The double aortic arch, in which a posterior limb passes behind the trachea and esophagus, then joins the anterior limb to form the descending aorta, and (2) right aortic arch with a patent ductus, ligamentum arteriosum or anomalous vessel encircling and compressing the trachea and esophagus. Dysphagia, laryngeal stridor, and attacks of dyspnea are the common symptoms. Gross²⁸ and Potts, Gibson and Rothwell⁴⁸ have reported successful surgical correction of these anomalies, usually by ligation and division of the smaller of the two vessels encircling the trachea and esophagus.

Congenital Cyanotic Heart Disease

One of the most important advances in cardiovascular surgery has been in the treatment of congenital, cyanotic heart disease. This spectacular contribution culminated an extensive clinical and laboratory experience, and it is a great tribute to the value of experimental surgery.

Cyanosis occurs when there is enough reduced hemoglobin in the circulating blood to cause a bluish color to the skin. It is possible for this condition to exist when there is free mixing of venous with arterial blood in the heart due to a large inter-

ventricular septal defect. It is more likely to occur when the aorta overrides, or is to the right of a septal defect. When these two anomalies are associated with a narrowed or obliterated pulmonic valve, cyanosis is even more marked, for there is then a reduction in volume-flow of blood to the lungs. Such is the case in the tetralogy of Fallot. Because of the increased effort required of the right heart to work against the stenosed pulmonary artery and the systemic pressure in the overriding aorta, hypertrophy of the right ventricle develops. The heart then assumes a boot-shaped appearance in roentgenograms, and the electrocardiogram shows a right axis deviation.

The degree of invalidism varies widely in this group of patients. Some are able to walk or even run a little, but many of them have marked limitation of activity, spending most of their waking hours in a characteristically squatting position. There is pronounced polycythemia and a high percentage of packed red cells, which predisposes toward thrombosis. Not infrequently this occurs in cerebral vessels, causing complex neurological changes.

It has been known in patients with tetralogy of Fallot, who had an open ductus arteriosus, that cyanosis or death occurred when the ductus closed. This observation led to the suggestion by Taussig that a ductus might be created surgically to by-pass the narrowed or obliterated pulmonary conus, and thus increase the volume-flow of blood to the lungs. This shrewd suggestion, when wedded to technical skill, gave birth to the "blue baby operation."¹¹

The creation of the artificial ductus arteriosus may be accomplished in a number of different ways. Originally, Blalock anastomosed the left subclavian artery to the pulmonary artery, but he subsequently preferred to utilize the right subclavian. Use of the innominate or carotid arteries carries a high incidence of cerebral complications, with an attendant increase in mortality. Blalock and his associates have operated upon more than six hundred of these patients.^{8, 54} More recently Potts, Smith and Gibson⁴⁹ of Chicago devised an ingenious clamp which permits a direct anastomosis of the aorta to the pulmonary artery. Extensive experience with this method has demonstrated its practicability.⁴⁷ The experience at Stanford University Hospital with this technique has been very gratifying³⁷ and has suggested its use in the younger age group in which the cyanosis is so severe that the patients might not be expected to survive to a more ideal operative age. The over-all mortality rate with these operations is between 5 and 18 per cent.

Reminiscent of Doyen's¹⁹ unsuccessful operation of pulmonary valvulotomy in 1913 is the recent report by Brock¹² of Guy's Hospital in London. He performed valvulotomy in three patients with congenital pulmonic stenosis. The valvulotome was introduced through the right ventricle and the stenosed area was cut while the instrument was guided by palpation. All three patients recovered from the procedure but in one there were emboli to both legs, and in another hemiplegia followed cere-

bral emboli. In the third patient, a girl of 11 years of age, the result was excellent.

An artificial ductus arteriosus is similar to an arteriovenous fistula between two great vessels, and, of course, to the congenitally persistent ductus arteriosus. Therefore the same physiological disturbances might be expected to follow its creation as occur in the presence of patent ductus or fistula. Yet it is not clear whether adding such a fistula to a heart already burdened by congenital defects and poor oxygen supply actually does increase or decrease the total burden to the heart. Certainly the increased oxygen saturation and lower ratio of packed red cells which follow an augmented flow of blood to the lungs are beneficial to the myocardium. Taussig states that about 30 per cent of such patients show cardiac enlargement during the first three weeks after operation, and a further 30 per cent have shown enlargement six months later.⁵⁴ An artificial ductus which is too large will invite cardiac decompensation.²³

Regardless of the eventual outcome in these patients, their improved physical capacity more than justifies the operative risk and the potential difficulties of the future. Furthermore, experience is being gained, and other advances in cardiac and physiologic surgery can be expected through lessons learned with these patients.

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California Cancer Commission Studies*
Chapter XXXIII

Adenocarcinoma of the Corpus Uteri

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CANCER of the body of the uterus is less common than cancer of the cervix. In large clinics it is observed about one-eighth as often as the cervical variety, although in private practice the latter is observed about as frequently as the former.

Fundal cancer occurs somewhat later in life than does cancer of the cervix, the majority after the menopause. (However, the author recently observed fundal cancer in a patient 28 years of age who had been treated for the preceding six months with various "shots" to control abnormal bleeding.)

GROSS PATHOLOGY

Adenocarcinoma of the endometrium may be diffusely spread over the surface or sharply circumscribed. It may not penetrate the uterine wall until late in its course, or this may occur early. It may first appear as a polypoid growth. In cases in which there is widespread involvement of the wall, the size of the uterus is greatly increased, the tissues are boggy, and the prognosis is grave.

The malignancy of cancer of this type is indicated by the type and arrangement of cells found on microscopic examination, and by the rate of growth of the tumor. Microscopically there are four grades, ranging from a type with only a small percentage of undifferentiated cells to one in which the cells are almost completely anaplastic and all glandular arrangement lost. This method of grading is not so satisfactory in fundal as in other types of cancer, for often all four grades are found in different areas of the same growth.

SYMPTOMS

Most of the cases of carcinoma of the corpus occur in women after the menopause. The commonest and most important symptom is abnormal bleeding. In these days when "shots" and oral estrogens are given for everything from osteoporosis to nosebleed, irregular bleeding can be traced to this cause in many instances. Due to the sheltered position of the tumor it is not subject to trauma, and abnormal discharge or bleeding may be a late symptom.

Pain is usually a late symptom. When it occurs early it is usually the result of some complication, such as infection. In the late stages it is a sign of extension of the growth, either direct or metastatic.

DIAGNOSIS

Any patient who complains of abnormal bleeding should be carefully examined. The cervix should be inspected through a speculum to eliminate it as a possible focal point. The only sure way to make a diagnosis of fundal cancer is by microscopic examination of the tissue obtained by curettage, which should always be done with the patient under anesthesia. Use of the suction curette is advised, as it is possible to explore the entire uterine cavity with this instrument. The old-fashioned curette cannot clear out the upper sixth of the cavity where fundal carcinoma frequently originates. As frozen sections are too thick for accurate diagnosis, embedded paraffin sections should be used.

Submucous myoma may interfere with the curette, making it impossible to reach the malignant area. The author encountered this difficulty recently. After negative findings in an examination of the material obtained by curettage, bleeding was attributed to an obvious fibroid. When the bleeding continued panhysterectomy was done, and an endometrial cancer was found which had extended directly through the uterine wall to the broad ligament. There was a 0.5 cm. area of carcinoma on the endometrial surface at the base of a small submucous myoma.

In the majority of cases of abnormal bleeding no malignancy is found, but it would be better to do many negative curettements than to neglect one early cancer. It should be impressed on the patient that the procedure is necessary not only to rule out malignancy but to establish a diagnosis. In premenopausal patients it may give information as to what type of endocrine treatment is needed. In many cases curettage stops the abnormal bleeding permanently.

Diagnosis by vaginal smear is of great value, but unfortunately there are very few cytologists adequately trained in this work. Cancer has been found by this method in cases in which results of examination of curetted material were negative. Until more people are trained to read the smears it cannot be widely used.

TREATMENT

In suitable cases, the most satisfactory treatment for adenocarcinoma of the fundus is panhysterectomy, with removal of both tubes and ovaries and a liberal vaginal cuff. As preliminary radiation undoubtedly prevents tumor dissemination at the time of operation, most surgeons prefer to use 3,500 to

*Organized by the Editorial Committee of the California Cancer Commission.

4,500 milligram hours of radium about six to eight weeks before operating. Radiation alone is inadequate, as it does not destroy the cancer in 50 per cent of the cases. It is of value in cases in which operation cannot be done due to obesity, old age, severe heart disease or other physical disability. The objection to the use of preliminary radiation is the delay of two or three months, and in clearly operable cases many surgeons rely on panhysterectomy alone.

At the time of operation the following precautions should be taken:

The lips of the cervix should be sutured together firmly. The vaginal vault should be thoroughly swabbed with Zepharin (or similar antiseptic) and packed with a roll of 3-inch gauze. This elevates the pelvic floor and facilitates operation at the deepest point of the field.

Clamps should be placed on each side of the uterus from the round to the utero-ovarian ligaments in order to obviate the squeezing of malignant tissue out through tubes or lymphatic glands when the uterus is handled.

PROGNOSIS

The prognosis is better for patients with carcinoma of the endometrium than for those with car-

cinoma of the cervix. The possibility of cure depends on the rate of growth and the degree of malignancy of the tumor, and on early diagnosis and adequate treatment. Periodic vaginal examinations are of little value in discovery of this disease, as the lesion cannot be seen or felt. A history of abnormal bleeding must be investigated immediately.

SUMMARY

Adenocarcinoma of the body of the uterus usually occurs somewhat later in life than cancer of the cervix.

Intermenstrual bleeding or postmenopausal spotting demand immediate, adequate diagnostic curettage.

The best treatment for cancer of the fundus is radiotherapy, followed in six or eight weeks by panhysterectomy.

The prognosis is good when the diagnosis is made early and the disease properly treated.

1136 West Sixth Street.

"Bone Tumors" by Don King, M.D., Chapter XXX of the Cancer Commission Studies, which was scheduled for publication in this issue of CALIFORNIA MEDICINE, will be printed in the July issue.



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EDITORIALS

R.I.P.

Governor Warren has come out again in a blast against the State Legislature for its action in tabling his 1949 version of a compulsory health insurance bill. The governor spoke his mind immediately after a committee of the State Senate had tabled his bill and he minced no words in making his position clear. Such items as the "three-million-dollar medical lobby" came into his statement and made good headlines in the newspapers of the state.

Just to set the record straight, the Senate committee acted entirely within its own prerogatives in tabling the governor's bill. The committee is a working body of the Senate, set up to screen the multitudinous bills which are presented to the Legislature and to advise the entire membership of the Senate on the advisability of considering or junking the various measures introduced. Such committees in both the Assembly and the Senate operate strictly within the rules of organization of their respective houses and their actions are subject to review by their respective parent bodies.

Governor Warren's bill was given a fair and complete hearing by the committee. Proponents and opponents were invited to testify for or against the bill and the committee exercised every courtesy and fairness in allowing witnesses to express the considered opinions of their principals. Following this hearing the committee took the bill under advisement and, after further study, voted to table it.

Even this action leaves the bill still available for consideration by the committee or by the Senate, if the desire to give it further consideration actually exists. The committee itself has the authority to reconsider the bill and the Senate as a whole has the right to vote to bring the measure out of com-

mittee for consideration on the Senate floor. In view of these possibilities it is a little surprising to find the governor in a petulant mood.

Further, the governor's reference to a multi-million dollar lobby is so far afield from practicality that it deserves no consideration from any thinking person. He was referring, of course, to the fund for public education sought by the American Medical Association for a nationwide campaign. For the governor's benefit, let it be noted that any money raised by the A.M.A. is intended for a national public education campaign and not one cent of such money has been forwarded to California. The purpose of this fund is to give the American public the true facts about compulsory health insurance and to act as a counterbalance for the vast sums spent by numerous federal and state agencies in propagandizing in favor of state medicine. If the A.M.A. campaign were restricted to California, Governor Warren would have long since heard about it.

We suspect that the governor, who has not been averse to using the power and prestige of his own office for lobbying that is not always subtle, may have overlooked the fact that the State Senate just doesn't want a system of socialized medicine in California. Acting within its own democratic processes, the Senate has rejected the governor's bill, despite the political prominence of its sponsor. We can see no objection to the exercise of legal power and authority, even though the wishes of the corner office are not satisfied.

Governor Warren has now watched four of his compulsory health insurance proposals, and a few indirect attempts in the same direction, go down to defeat at the hands of sincere, thinking members

of the State Legislature. It would seem gracious on his part to accept the will of the representatives of the people of California and bestow a blessing at the burial of such proposals.

Annual Session — 1949

Completion of the Association's 1949 Annual Session—the seventy-eighth in ninety-three years of organization—marked another milestone in the progress of California medicine and taught two lessons. First, that a topflight scientific program can be developed on the base of our own intrastate medical knowledge plus a careful selection of guest speakers; second, that the Association has grown to such a size that added meeting facilities must be sought.

The Annual Session attracted an unusually large number of sound scientific papers, drew a large number of technical and a smaller number of scientific exhibitors, focused public attention for a few days at least on the progress of medical practice and, all in all, provided a meeting place for friends and colleagues on a personal as well as medical basis.

On the scientific side, numerous complimentary remarks have already been heard as to the high quality of the material presented. The Committee on Scientific Work, after months of planning, brought forth a program which was accorded a splendid recognition by those at the meeting. The very overflowing of meeting rooms attested the quality of the papers. Section officers complained only about the inadequacy of the rooms available to them.

On the business side, the House of Delegates, operating with four reference committees instead of three as heretofore, moved swiftly through its deliberations, held elections and installations and paid homage to physicians who have been members of the Association for fifty years or more. The House of Delegates was the largest the Association ever assembled—recognition of the growth of the organization.

As to meeting quarters, the 1949 session fairly burst at the seams. Even the largest meeting room was barely adequate for the number who attended and the smaller rooms were filled to overflowing and to the point where one section chairman complained that a number of members left the meeting because they became tired of standing in the outside hallway. The session utilized every available public room in a large hotel, plus a neighboring theatre and two large rooms in a nearby auditorium building. Even with this space available, meeting quarters were inadequate.

These overflowing crowds bring to mind the fact that the Association has increased rapidly in size in recent years and that new records in Annual Session attendance are on the way. The registration this year topped 3,600 persons and for next year and the years to come will doubtless go higher. In earlier

times there were various hotels available to meet the requirements of a smaller membership and a lesser number of specialty section meetings. Now, with an increased membership and an augmented state population, new horizons appear and must be conquered.

Two possible solutions to this problem come to mind at this time. One, that fewer sectional and more general meetings be arranged, so that the advanced knowledge of the specialists may be made available to the general practitioners and to specialists in other fields whose problems cross specialty lines. Second, that public auditoriums be sought for the holding of meetings, so that a large attendance may be accommodated and the information offered may be made available to all who would listen. This might do away with the more intimate practice of concentrating all session activities under one roof but it would certainly guarantee an adequacy of space for the larger number of members who turn out each year in quest of information and knowledge.

The Council of the Association has voted to hold the 1950 Annual Session in San Diego, where large public buildings will be available. This is a departure from earlier practices but we hope it will prove to be a beneficial move, geared to present and potential needs.

Industrial Fees — What Next?

Since early last year the California Medical Association has been striving to bring about the adoption of a schedule of fees for industrial injury cases that would be fair to the injured employee, the employer and the physician. However, numerous obstacles have been encountered and this goal is still distant.

The Association published its own recommended fee schedule early in 1949 and suggested that it be put into effect by all members. The insurance carriers countered by agreeing among themselves not to pay these recommended fees. The Association continued to recommend that such fees be considered fair and equitable and great confusion has arisen in billing for professional services at one figure and collecting, in some instances, at another. To the everlasting credit of many insurance carriers and many self-insurers, the fees set by the Association have been considered fair and equitable and have been paid without question. These people agree that the professional man is the best qualified individual to pass upon the fairness of fees for professional services.

More recently a committee of the Association's has been meeting with a committee representing a large group of insurance carriers and has attempted to arrive at a schedule which may be mutually acceptable. At this writing such a schedule has not been produced but hope springs eternal and this objective must not be discounted completely. At least, discussions have been held and some signs of progress have been seen.

If the movement to work out an amicable settlement should fail and the deadline of June 30, 1949, set by the Industrial Accident Commission should arrive, the prognosis is for complete chaos and, undoubtedly, a further effort at chiseling and fee-

shopping by some insurance carriers. Members of the Association will be kept advised of all developments in this field and advised of any official decisions by the governing bodies of the Association. Right now, our fingers are crossed.



Letters to the Editor . . .

Let's Look at the Health Map

During the first decade of this century the doctors looked at the medical schools. The result of this long look was not only a Council on Medical Education and Hospitals and a survey of medical schools but a decline from 162, an all-time high, to 62, an all-time low in 1930, of four-year medical schools. Thus was eliminated a large number of schools of poor standards, inadequate training, and precarious financing.

On April 2 the Commonwealth Fund released the published report on "The Study of Child Health Services and Pediatric Education." This volume of 270 pages is the compiled work of practically every physician and dentist in the United States. The numerous maps, graphs, and charts depict graphically the status of health services and pediatric education in this country. It represents a herculean piece of work, and many people have said and are saying, "Another survey to be shelved." However, this need not be the case; instead it is and should be another evidence of doctors looking at themselves and the gaps in their work at a time when medicine is progressing at a rapid pace and when the entire world is looking to American medicine as the answer to its own problems. This study well might denote the half-way mark of the century, the first decade of which represents American doctors' first critical look at their system, and it can be the basis upon which doctors now chart the course to be taken in order to extend to all our people the benefits of modern health practice in the best American fashion.

The original promoters of the move in the Academy of Pediatrics to study the child health services in the United States premised this need with four main factors as the reason why children do not receive the desirable preventive and curative care compatible with present standards of pediatric practice. These were: (1) The parents are unable to pay for such services. (2) There is an unwillingness to use, or lack of knowledge of, the available facilities. (3) Services are not available wherever children live. (4) There are not enough physicians well trained in the medical care and supervision of children in all areas.

The study provides the graphic answers to these posed problems. There is a definite correlation between income and services, there is a mal-distribu-

tion of both facilities and personnel. There are discrepancies in training and the work required of physicians when they enter practice. There are also many somewhat surprising revelations in the study. Thus the supposedly vanishing general practitioners constitute two-thirds of the physicians practicing in the United States. The study reveals that the family physician carries three-fourths of the total burden of child care and one-third of his practice is devoted to children. Medical education is not oriented to train these physicians so that they are equipped to meet the type of practice that the community imposes upon them. Of the physicians graduating from medical schools almost half of the general practitioners have had little hospital training in pediatrics before entering practice. Thirty-five per cent have had one month or more hospital training in pediatrics, 33 per cent have had less than one year hospital training of any kind, and 32 per cent have less than one month's hospital training in pediatrics.

Another surprising revelation (and it should allay some of the fears of antagonists) is the extremely small volume of medical care provided by community health centers and clinics as compared with the great volume carried by private physicians and especially the general practitioner. Furthermore, although government public health clinics and conferences should fill the economic gaps in the health program, they in general follow the same pattern of aggregation in heavily populated areas as do the rest of medical services.

Official comments and plans are not yet ready for release. Dinner addresses at the time of the release of the report and discussions at preceding meetings, however, pointed to two things of interest. One of these especially emphasized by the President of the A.M.A., Dr. Roscoe Sensenich, was the importance of action at the local level, the formation of community health councils or committees to acquaint themselves and their neighbors with available facilities and resources and the inadequacies. Such stimulation need not wait for either over-all recommendations or financial support; it requires only local interest.

Part of the problem of good medical practice is that of rapid dissemination of newer knowledge to all areas. This phase was emphasized particularly in discussions on continued education, and at these meetings was stressed the necessity for maintaining

fluidity, freedom for communities and areas to experiment, to try out various methods of approach as opposed to regimentation or adoption of frozen patterns. (Is not the real secret of American medical progress the more or less automatic avoidance of stagnation that is furnished by our fluid system of practice? Arrested development may occur not only in isolated areas far from medical centers but in isolated situations in large cities such as full-time work in health centers, or even among professors in their ivory towers devoting all their time to guinea pigs and gargoyles, unaware of more vital problems around them.)

Both of these ultimate aims point to the desirability of physicians and dentists in the United States

looking at the map and starting to chart a course to equalize the benefits of training and practice in our country.

The book is called "Child Health Services and Pediatric Education." It is published by the Commonwealth Fund in New York and should be available through that foundation or through local medical book stores.

Each state is also analyzing the local material, publishing the findings and making recommendations. Some of these state reports have been completed, others are in the making.

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Program of the California Medical Association for the Improvement of Medical Care

The following program for the improvement of medical care was adopted by the Council of the California Medical Association at its meeting May 8, 1949, and approved unanimously by the House of Delegates on May 10, 1949. The program is a development of previous programs adopted by the Association for the improvement of the public health. The committee which prepared it received assistance from programs adopted by other state medical associations as well as from that of the American Medical Association.

1. **Health Insurance.** Further development and wider coverage by voluntary medical care and hospital plans (both medical association and insurance company sponsored) to meet the costs of illness. Aid to the indigent by utilization of these plans by the several counties, with local administration and determination of needs.
2. **Public Health.** Coordination and integration of all public health activities, except those of the medical services of the armed forces, under the state department of public health. Incorporation in local public health units of such services as communicable disease control, vital statistics, environmental sanitation, control of venereal diseases, maternal and child hygiene and public health communicable disease laboratory services.
3. **Rural Care.** Encouragement of the development by professional and lay organizations of medical and hospital services for rural areas, and of the integration of these services with regional county hospitals and small institutions.
4. **Mental Hygiene.** Continued development of the state program of mental hygiene.
5. **Chronic Diseases and the Aged.** Aid by the voluntary and state welfare agencies, combined with professional and other services, in the provision of care and rehabilitation of the aged, and those with chronic disease, and various other groups not covered by existing arrangements.
6. **Industrial and Preventive Medicine.** Greater emphasis on the program of industrial medicine, with increased safeguards against industrial hazards and prevention of accidents occurring on the highway, home and on the farm.
7. **Veterans' Medical Care.** Integration of veterans' medical care and hospital facilities with other medical care and hospital programs and with the maintenance of high standards of medical care, including care of the veteran in his own community by a physician of his choice. Cooperation of the C.M.A. with veterans' organizations in the continued development of good medical care.
8. **Health Education.** Health education programs administered through suitable local educational, health and medical agencies to inform the people of available facilities, and of their own responsibilities in health care.
9. **Medical Education and Personnel.** Promotion of private financial assistance to medical, dental and nursing schools and other institutions necessary for the training of specialized personnel required in the provision and distribution of medical care. Revision of income tax and estate tax laws so as to encourage people to donate needed assistance to medical and associated professional education.
10. **Medical Research.** Continued promotion of medical research through private grants to institutions equipped and staffed to carry on qualified research.
11. **Postgraduate Medical Education.** Expansion of the postgraduate medical training program of the California Medical Association, to assist practitioners in rural areas in keeping abreast of latest advances in medical science.

The New President-Elect



In electing Dr. Donald Cass of Los Angeles to the office of President-elect of the California Medical Association, the Association has done itself and the profession of medicine a service.

Dr. Cass, a native son of California, was born in Los Angeles, March 13, 1892. He received his education in the public schools of Los Angeles, Stanford University and the Stanford University School of Medicine, receiving his Bachelor of Arts degree in 1914 and the degree of Doctor of Medicine in 1917. He served an internship in Stanford University Hospital and immediately entered the United States Army, in which he served in World War I with the rank of first lieutenant, Medical Corps.

On June 29, 1917, he was married to Miss Leona Waite at Visalia. Dr. and Mrs. Cass have a charming family consisting of one daughter and two sons. Dr. Cass has been in practice in Los Angeles since 1919 and is an outstanding type of general practitioner. He has served on the staff of the Los Angeles General Hospital and was for four years instructor in medical diagnosis in the College of Medical Evangelists at Los Angeles. Among his contributions to the medical literature is an outstanding article published in *The Journal of the American Medical Association* and entitled "The Diagnosis, Treatment and Outlook of Patients with Circulatory Asthenia."

Dr. Cass has been very active in the work of the county and state medical associations, having served

several terms as a member of the council of each organization. For many years he has been chairman of the Committee on Industrial Practice of the California Medical Association and has been largely responsible for the various industrial fee schedules. He was twice president of the staff of the Queen of Angels Hospital in Los Angeles and during World War II served as a senior surgeon in the United States Public Health Service. He is now serving his third term as a delegate to the American Medical Association, where his service has been outstanding.

The California Medical Association is indeed fortunate to have at its command the services of such a man as Dr. Donald Cass and may look forward confidently to an administration which will not only reflect credit upon himself but will serve his profession.

C.P.S. Administrative Members' Meeting

Two evening meetings of administrative members of California Physicians' Service were held during the C.M.A. convention in Los Angeles on May 8 and 10. Both were outstanding for the support and interest shown in the growth and adaptation of C.P.S. to better meet the needs of beneficiary and physician members.

The meetings were chairmanned by Dr. Lowell S. Goin, president of the C.P.S. board of trustees. In his opening speech, he referred to compulsory bills now pending not as "health" plans, but as "compulsory sickness taxes." He referred to an editorial which appeared in the *San Francisco Chronicle*, lauding C.P.S. for the new offer of memberships for individuals in 17 northeastern counties, and urged administrative members to take no actions which might induce a paper such as the *Chronicle* to reverse its stand regarding the ability of voluntary plans to stem the tide of compulsory sickness tax plans.

Dr. Chester L. Cooley, outgoing secretary of the board, presented a resume of action taken by the board during the eleven meetings held during the past year. He lauded the work of the fee schedule committee in the time and effort expended in eliminating inequities in present C.P.S. fees. He reported that good progress had been made toward establishment of a reserve fund as recommended by administrative members last year; and that the veterans' home town care program is continuing to meet with wide public and governmental acceptance. The appointment of special review committees, by individual county medical societies, has also progressed rapidly, Dr. Cooley reported.

Mr. William M. Bowman, C.P.S. executive director, gave the business report, which indicated that during the past fiscal year reserves have increased from \$185,288 to \$943,359, and that the surplus increase for the year was \$758,071, as against \$580,433 during the previous year. Bowman said the

reserve for unreported claim is now \$1,460,988, as against \$1,091,444 during the year 1947-48.

Following these reports, Dr. E. Vincent Askey, outgoing C.M.A. President, introduced Dr. L. Howard Schriver, president of Associated Medical Care Plans, who presented an A.M.C.P. plaque to Dr. Goin in national recognition of the contribution and leadership of C.P.S. in the national field of voluntary health care. "Just ten years ago the doctors of California, through the California Medical Association, said: 'While the rest of the nation talks about it—let's go ahead and do the job. . . .'" He praised the administrative members for the record C.P.S. has written; for the example it has set for the plans of other states.

Following the presentation from the floor of resolutions, and the study and recommendations of the resolution committee, headed by Dr. Donald Cass of Los Angeles, the following were forwarded to the C.P.S. board of trustees for further consideration and final action:

(1) A resolution that the C.P.S. administration be instructed to secure additional actuarial and statistical information, for purposes of further study of C.P.S. costs and benefits.

(2) A resolution that physician members be required to submit a written notification of resigna-

tion, to be effective thirty days following the publication of the next printed directory of physician members. These directories are to be issued at least every six months.

(3) A resolution that income ceilings be changed to a \$3,000 gross income for single persons and \$3,600 gross income for members with dependents.

(4) A resolution that physician members be instructed to refer C.P.S. patients to physician-owned laboratories in the future.

Considerable interest was elicited in connection with a proposed new billing form (No. 9) for physicians. This would require the C.P.S. member himself to state his income and give his membership status, relieving the doctor of this responsibility.

The appointment to the board of Dr. Kendrick Smith of Los Angeles and Dr. John Rumsey of San Diego was confirmed by the administrative members. Dr. T. Eric Reynolds of Oakland and Dr. Frank A. MacDonald of Sacramento were nominated and elected to fill the terms vacated by Dr. Chester L. Cooley and Dr. A. E. Moore. Rt. Rev. Msgr. Thomas J. O'Dwyer was reelected to the board, and Thomas Hadfield of San Francisco, vice-president of the American Mutual Liability Insurance Company, was elected to fill the vacancy in the board requiring a non-physician member.



Progress in the Campaign Against Compulsory Health Insurance

The following is an address before the House of Delegates of the California Medical Association by Clem Whitaker of Whitaker & Baxter, directors of the National Education Campaign of the American Medical Association.

Everywhere we go, in the East and Middle West, Baxter* and I are asked to tell what has become known as "The California Story"—and you can be very proud of the high regard in which the California Medical Association is held.

If the national fight against Compulsory Health Insurance is won—and of course it *must* be won—the strategy and plans first developed here, in this House of Delegates, back in 1945 and 1946, will be a major factor in the victory.

Here, we decided, it wasn't enough to just beat a bill. We had to resolve a problem. We had to provide the people with prepaid medical care!

Nationally, that same decision has become one of the foundation stones of the campaign. American medicine isn't going to be content just to beat a bill. American medicine is going to help the American people resolve a problem!

Here, in California, we developed the theme—THE VOLUNTARY WAY IS THE AMERICAN WAY—and then we proceeded to build the Voluntary Systems and give substance to that theme.

Today, that theme—first put down on paper in this hotel, in 1945—has become the slogan of the national campaign. Soon millions of Americans will know that theme because there's a new pamphlet, which Baxter has written, running off the presses now—entitled: THE VOLUNTARY WAY IS THE AMERICAN WAY!

Within another year, let us assure you of this, there won't be any American who doesn't know that he can buy budget-basis medical care for his family—and there won't be any state in the United States without a vigorous promotion campaign for Voluntary Health Insurance.

Sometimes one has to leave his home state to get proper perspective on it—and to have a proper appreciation of the stature of its leaders.

I wish you could all know, as we know, how well the country thinks of California medicine—and the progressive program which California doctors have sponsored.

I wish you could know the pride which we feel when we see the esteem in which your leaders are held.

I wish you could know, too, how the other states feel about the tremendous strides which California Physicians' Service has made—and how eager they are to pattern after it.

Here, at home, in close perspective, we see all the imperfections; we know all the little, daily vexations—but go to New England, as I did recently, and

*Leone Baxter of Whitaker & Baxter.

you'll get a respectful, attentive audience every time you mention the program of California medicine.

There's a lot of local pride in all the states, as there should be, and many of the more progressive states today are backing ambitious medical programs which are winning acclaim, too, and which will be tremendously helpful in stemming the tide of socialization.

There's going to be some very vigorous rivalry between the states to develop new and better means of combatting political medicine—and that's a healthy development which Whitaker & Baxter certainly are encouraging.

All over this land, doctors are learning to practice on the body politic—and are becoming very proficient in the art of political persuasion. We have the evidence of their work in our files—and every day brings a new deluge of letters, not just from the officers of medical societies, but from rank and file doctors everywhere who have enlisted in the fight to save their profession.

Perhaps you still wonder about the doctors who seldom attend their medical society meetings; about the doctors who are so completely absorbed in their practice and their academic and scientific pursuits—you wonder whether they will respond, now that the decisive battle is nearing.

We can give you some first-hand evidence on that score.

There are still thousands of doctors who apparently don't know their house is on fire, but every day a few more smell the smoke—and join the fire department!

We are hearing from them at the rate of about 3,000 letters a week—and we have no way of knowing, of course, how many thousands of letters, phone calls and personal enlistments are being received in county and state medical societies.

By the way, if some of you don't hear from us quite as promptly as you think you should, when you write in for information, that load of correspondence is one of the reasons.

Our outgoing mail, including our mass-mailings to community leaders over the country, has become so heavy that we have had to buy a power-driven stamp-cancelling machine to handle the volume. Special mailings to special groups, just for the next two weeks, will total over a million pieces.

But let me give you a few clues as to how medicine is responding, even at this early stage of the campaign—and the magnitude of a nation-wide campaign, of course, means that it takes longer to get the wheels in motion.

Orders for the new poster of the Fildes painting, "The Doctor," captioned, "Keep Politics Out of This Picture"—which is to be displayed in doctors' offices, as the keynote of our campaign—are rolling in at the rate of about 1,000 a day. And we are now filling the orders for this poster on the same day they are received.

Our objective is to have 50,000 of these posters actually up, on display in doctors' offices, within the next 60 days. If that goal is achieved, we will know

that at least 50,000 doctors in America have joined the crusade to keep American medicine free—and you may be sure that President Truman and the members of Congress will know it, too!

But if we are really determined to build an impregnable defense against socialization; if we really want to command new respect for the medical profession in the halls of Congress and throughout the nation, we can't stop when we achieve that objective.

Eventually—it may take six months, or even a year, to achieve this goal—we need 100,000 doctors' offices in America displaying the Fildes poster.

That means we need help from all of you—and all other leaders in medicine—in lighting the crusading fires.

To the men of medicine, this poster should become a *symbol of enlistment*—a notice to their profession and their patients that they have taken their stand against political medicine!

When that poster is on display, it should mean that no patient ever will leave that office before the doctor has taken a minute or two of his time to tell the story of Compulsory Health Insurance—and the disastrous results it would bring, if enacted in this country.

It should mean, too, that every patient who needs Voluntary Health Insurance will be encouraged by the doctor to get the type of coverage that best suits his requirements.

Because the poster will quicken interest of the people waiting in the doctor's reception room, Baxter has a special pamphlet on the press now, with a miniature reproduction of the Fildes painting on the cover. It is a brief, popular treatment of the subject, which can be read on the run—and *two million copies* will be available for shipment to state and county medical societies within the next ten days. This pamphlet, which also can be used as a letter-enclosure, is designed especially for use in doctors' offices.

You may think, as you listen to these plans, that we want every doctor to become a campaigner—and every doctor's office to function as part of a nation-wide pamphlet distribution system. Let's be frank: That's exactly what we want—and that's what your campaign desperately needs!

This isn't just another skirmish in the fight against socialization.

This is the decisive battle that will determine the fate of American medicine for generations to come.

Within just a few days, the congressional hearings open in Washington—and once they have started, there will be no letup in this fight until one side or the other has been decisively defeated.

The next two or three years will determine whether you are to remain in the private practice of medicine. *And if the decision once goes against medicine, there will be no turning back; there will be only a tightening of the lockstep you walk in!*

Your professional life is at stake! The health of America is at stake!

Our liberty—and everything we count important—is in jeopardy!

This isn't just a battle to save medicine. This is the most crucial battle that will be fought in our lifetimes—to save America, to turn back the tide of Socialism and despotism before it is too late.

This is an emergency—and we are calling all doctors!

It is without doubt the greatest emergency any of you ever have confronted in all your years of practice.

Not just one life hangs in the balance, but the life of a nation is in your hands—a nation that has become the last hope of all the liberty-loving people of the world.

Is it then too much to ask that every doctor become a campaigner?

There isn't a man or woman in medicine worthy of the high ideals of your profession who wouldn't respond to an emergency call if the life of a person, or a family, or a community was in danger.

But this emergency is so vast that it is hard to grasp.

If it is even hard to arouse many of the doctors of America, think how much harder it is going to be to arouse all the people of this country to the full implications of this struggle.

This truth we know—and this truth we must some way make America know:

When medicine is socialized; when doctors and their patients are regimented, the beginning of the end is in sight. It is one of the final, irreparable steps toward complete state socialism. And at the end of that road is human degradation and misery . . . loss of incentive, loss of human dignity, loss of everything that means most to free men.

There are many men who will call us extremists when we make such statements—when we rip through the pages of obscure text in the Truman program and reveal the real intent of the act. They are cousins of the same men who saw no danger in Compulsory Health Insurance when it was first adopted in Great Britain. And today Britain is plunging headlong toward a regimented society that will blot out every vestige of liberty for the British people, unless the tide is turned back.

Perhaps some of your doctor friends, when you tell them about this—if they are impressed with the gravity of the issue—will exclaim: "What is A.M.A. doing about this?" "What is our national campaign headquarters doing?" "What happened to our \$25?"

We want to answer those questions frankly, because every doctor has a right to know what's going on in Chicago.

First, let us make one emphatic statement for the records, because A.M.A. needs your confidence and your aggressive support—and you need a militant, fighting A.M.A. leading this battle:

A.M.A. may have had many shortcomings in the past. It may still have some . . . because any great organization usually has. But the new A.M.A. that is leading this battle is a heads-up, fighting organization that will gladden your hearts. It has found that it can step militantly into this greatest public issue

of our time, without sacrificing an iota of its dignity—or of its significance as a great scientific institution.

The Board of Trustees and the Coordinating Committee of A.M.A., to whom we look for authority in the management of the campaign, have backed us up every step of the way, even on difficult policy decisions which might bring down criticism on all of us. Dr. Elmer L. Henderson, the chairman of the Board of Trustees and also chairman of the Coordinating Committee in charge of the campaign, is a grand soldier, with a fighting heart and a tireless devotion to his job. And Dr. Lull, the A.M.A.'s General Manager, whom most of you know, is as fine a general today as he was when he wore Uncle Sam's uniform.

I am making this statement tonight because Whitaker & Baxter are in Chicago only because of the confidence which many of you imposed in us—and because this issue to us seemed to transcend every other consideration.

We have no desire to stay in Chicago beyond this term of servitude—and the sooner we can get this job done and get back to California, the happier we will be. But because you got us into this, we think you ought to know that we have had splendid support from A.M.A.—and we hope with all our hearts that out of this fight will come a strong, united medical profession, with confidence and pride in its leadership. Of course, it can't be disputed that having a few top-ranking California doctors in the higher councils of A.M.A. may have something to do with the happy report we are rendering.

If, by this statement, I have given the impression that all is sweetness and light in Chicago—and that every day dawns brightly—I want to correct that impression immediately.

Since the first day we arrived in Chicago it seems there has been a crisis every hour, on the hour—with minor revolts and disruptions sandwiched in between. We never dreamed there could be so many internal problems in internal medicine! But some of the biggest disruptions and problems, which threatened the success of the campaign, have been entirely cleared away—and other serious problems are slowly yielding to treatment.

More than anything else, it is imperative that we have a united front—and that is one of the objectives toward which we have been working, with the warm-hearted backing of A.M.A.'s policy-making boards.

One policy that is firmly established is this:

There are going to be no punches pulled in this battle. If you read Dr. Henderson's reply to President Truman, you will know what I mean.

American medicine has been a whipping-boy for political demagogues far too long—and this fight can't be won by policies of compromise or appeasement. A few doctors thought we were too tough with the President, but most of the mail, I am glad to report, indicated that the doctors liked the militancy of Dr. Henderson's statement.

Already a shift has quietly started in this campaign—and medicine is gradually emerging from a defensive position. That shift won't be accomplished overnight, because the advocates of socialization, with the White House and the Federal Security Administration as sounding boards for their propaganda, have powerful facilities to reach the people. But before this year is out, I think you will find a great change in public sentiment.

All of us in Chicago, since the campaign began, have been doing our utmost to broaden the front—and win new allies for medicine. That work is starting to pay dividends. The action of the General Federation of Women's Clubs in going on record against Compulsory Health Insurance was a stunning defeat for President Truman and Oscar Ewing. They had sent a staff of government department heads and workers to the convention, hoping to forestall our drive for Federation action in support of medicine's cause. Even Mrs. Roosevelt and Senator Pepper showed up at the convention, but when the votes were counted only three of the 2,000 delegates supported the Truman program. That is a dramatic demonstration of the clear thinking of foremost women in this country. It is demonstration, too, of the power of doctors—and doctors' wives—when they really go to work . . . and it should give all of us increased confidence.

Only a few days ago another powerful organization—the National Fraternal Congress of America, representing several hundred of the strongest lodges and fraternal orders in the nation—also took its stand beside the medical profession and went on record against Compulsory Health Insurance.

The American Farm Bureau Federation, the American Legion, the American Bar Association—and scores of other powerful organizations—have come into the fight against socialization . . . so that medicine need not stand alone.

HELP FROM OTHER ORGANIZATIONS

In the past 10 days, the list of organizations supporting medicine's position—in the country at large—has jumped from 178 to 518. The organization drive in the states and counties has rolled into high gear in most sections of the country, and we have an objective here, too: By the end of the year, we hope there will be at least 5,000 organizations in America on record against Compulsory Health Insurance—and in favor of Voluntary Health Insurance.

Likewise the educational work with some of the powerful *national magazines* and newspapers, which had previously been unsettled in their position on this issue, has started to bring results. We're getting some barbs along with the editorial endorsements of medicine's position, but we *are* making progress—and overcoming misunderstanding and ill will of long standing.

When the chips are down, and the critical roll-calls come on this issue, I think you will find that medicine will have staunch support.

Now what about that \$25? What's that going into? Thus far our expenditures have been comparatively modest, but our staff has been built and trained now, the presses are running, with orders that total millions of pieces, and costs are mounting!

If all goes well, we will issue and distribute *100 million pamphlets* during the next twelve months—probably the heaviest pamphlet barrage ever laid down in America, except during a presidential campaign.

THE HIGH PRICE OF LIBERTY

That costs money. It takes a lot of \$25 contributions to buy a million pamphlets—and nothing we issue is in quantities of less than a million. That's a minimum order when you are splitting the shipment between 48 states—and most of our mass-mailing pieces will run into many millions of copies.

Our opponents have criticized us for having too much money. But they would *pity* us if we didn't have the money! In a fight like this, no matter what we do, there'll be lots of bitter criticism. That's part of the breakage in a battle for survival—and this is that kind of battle.

No matter what this campaign costs in money, it will cost much more in time and energy—and in tireless work by doctors and thousands of others all over the country.

The \$25 a doctor gives, in most instances, will be the smallest part of his contribution. The time he gives away from his practice; the evenings he spends away from his family, addressing meetings; the hours invested in moulding public opinion for his profession—these will all be costly contributions.

But no matter what the cost, in money, in energy, in frustrations and irritations, and even in damage to health, the cost will still be just a fraction of the terrific price we would pay if this fight were lost.

We have fought two world wars in defense of our liberty, so we have no illusions about the cost of freedom.

The *price* of liberty comes high—but the *loss* of liberty; that's a price none of us can afford to pay.

Let us give you this strong, personal assurance:

This fight *can* be won—and it *will* be won! It simply *must* be won!

And in the winning of it, all of you—and all of the other doctors, throughout America, who get into the battle—will contribute to the well-being of this nation in greater measure than you ever have had the opportunity to do before.

This is the greatest challenge any of us ever has confronted. With socializers on the march all over the world, *we* have been given the task of reversing that trend. That's the stupendous responsibility—and the wonderful opportunity—which has been given the doctors of America. It is an opportunity to change the course of history . . . to defend our good way of life, and to leave a priceless inheritance to generations yet unborn. American medicine, I am confident, will be equal to the job!

Two U.S. Senators Attack Compulsory Health Insurance

Two United States Senators—a Democrat and a Republican—joined recently in a vigorous attack on President Truman's plan for federal compulsory health insurance, describing it as a vital issue that transcends all political party lines.

Senator Allen Ellender, Louisiana Democrat, and Senator Harry P. Cain, Washington Republican, condemned the plan as a dangerous proposal which would create a mammoth Government bureaucracy, provide inferior medical care, impose an unpredictable tax burden on the people and pave the way for the ultimate regimentation of our entire national life.

The two Senators spoke before 600 California business, farm and civic leaders at a dinner meeting held in the Palace Hotel under the sponsorship of the California Medical Association and presided over by Dr. Ray Lyman Wilbur, former president of Stanford University. Their addresses were broadcast over a western regional radio network.

"Compulsory health insurance will do violence to our way of life," Senator Ellender said. "It will destroy initiative, incentive, and freedom of action, the handmaidens of a system that has given us the highest standard of living and the best medical care of any nation on earth."

Senator Cain declared that the adoption of compulsory health insurance would regiment not only American doctors but also American patients—"and that means every man, woman, child, and infant in this country."

"As a member of the Senate who has observed, at close quarters for 13 years, the inefficiencies of Government administration," Senator Ellender said, "it requires no stretch of my imagination to picture the chaos and confusion, and the enormous administrative cost of a medical program conducted under political direction."

Politically-controlled medical systems "hamstring both doctors and patients with a frustrating maze of Government regulations and serial-number medical methods," according to Senator Cain, who added:

"Those who suffer are the people who are really sick and who need careful, personal attention at the proper time—not at a time and in a manner prescribed by a Government clerk or a mimeographed regulation. The inevitable, tragic result of such an impersonal system is a progressive decline in the people's health."

Senator Ellender declared that "the loudest cries for socialized medicine have come from the Government planners, always seeking another experimental toy; the Socialists, who openly advocate absolute government control; the Communists, who support any proposition that may disrupt our economy and ripen our country for revolution; the loafers, who seek any opportunity to get something for nothing."

Commenting that the proponents of compulsory health insurance "dislike to be pinned down on such practical matters as the cost of their scheme," Senator Cain said that numerous experts on medical economics, public health, and taxation have predicted "ultimate annual costs ranging from 10 to 18 billion dollars, a 6 per cent payroll tax just to get the system in operation, and an eventual pay-check tax rate of 10 or 12 per cent."

Declaring that suggestions of extremists must be rejected and that a solution must be found within the framework of the free enterprise system, Senator Ellender said:

"I call upon you, the doctors, and you, the people, to come forth and assert yourselves. You will find a substantial majority of your law-makers eager to cooperate with you in the development of a sound and adequate program, one that will accomplish the purpose without extinguishing the light of freedom that has made America great."

Senator Cain pointed to the rapid growth of voluntary health insurance, describing it as the truly American way to cushion the financial burden of sickness. He reported that 55 million people now have 80 million policies giving them the kind of hospital, surgical, or medical coverage they want.

"When we look at the record of our national progress in the field of voluntary health insurance," Senator Cain said, "it becomes crystal clear that the American people are meeting this problem and neither need nor want governmental interference."

Council Meeting Minutes

Tentative Draft: Minutes of the 358th Meeting of the Council of the California Medical Association, San Francisco, March 5-6, 1949.

The meeting was called to order by Chairman Bruck at 8:00 p.m., Saturday, March 5, 1949, in Room 261, St. Francis Hotel, San Francisco.

Roll Call:

Present were President Askey, President-Elect Kneeshaw, Speaker Alesen, Vice-Speaker Charnock, Councilors Bruck, Ball, Crane, Henderson, Ray, Lum, Pollock, Green, Cherry, MacLean, Hoffman, Shipman, Bailey and Thompson, and Secretary Garland.

A quorum present and acting.

Present by invitation were Executive Secretary Hunton, Legal Counsel Hassard, Mr. Ben Read, executive secretary of the Public Health League of California, Messrs. Clem Whitaker, Clem Whitaker, Jr., and Ned Burman of public relations counsel, Assistant Executive Secretary Wheeler, Field Secretary Clancy, county society executive secretaries

Glenn Gillette of Fresno, Rollen Waterson of Alameda, Frank Kihm of San Francisco, and Kenneth C. Young of San Diego; Dr. Dwight H. Murray, chairman of the Committee on Public Policy and Legislation and Dr. Donald Cass, chairman of the Committee on Industrial Practice.

1. Minutes:

(a) Minutes of the 357th meeting of the Council, held December 18-19, 1948, were approved.

(b) Minutes of the 213th meeting of the Executive Committee, held January 23, 1949, were approved.

2. Membership:

(a) A report of membership, showing 5,877 dues paid, 3,568 members whose 1949 dues have not yet been received, was received and ordered filed.

(b) On motion duly made and seconded in each case, eleven 1947 members whose 1948 dues have been received since the last Council meeting were voted reinstatement as active members.

(c) On motion duly made and seconded in each case, 18 applicants for Retired Membership were voted so elected. These were:

Alameda County: George T. Honaker, Charles E. Mooser.

Los Angeles County: Henry J. Andrews, Leslie C. Audrain, Mary Hess Brown, Samuel K. Jamentz, Ernest Marshall Johnstone, E. D. Kremers, Frank Edison Long, Ray Robert Miller, Richard F. Mogan, Arthur C. Thorpe.

San Diego County: Thomas F. Wier.

San Francisco County: George K. Herzog, G. H. Mize, Kaspar Pischel, Hugo A. Wahl, John West Wilson.

Ventura County: Walter F. Mosher.

(d) On motion duly made and seconded in each case, nine applicants were elected to Life Membership. These were:

Alameda County: A. M. Field, J. R. Masterson, A. M. McIntosh, Roderick O'Connor.

Humboldt County: Eugene V. Falk.

Los Angeles County: Ralph W. Bucknam, Henry H. Lissner.

San Diego County: John Francis White.

Tehama County: Frank L. Doane.

(e) On motion duly made and seconded in each case, 25 applicants were elected to Associate Membership. These were:

Alameda County: N. N. Ashley, Susan Danielson, Jesse C. Edwards, Thomas O. Lake, Frederick C. Mackenbrock, Jonas N. Muller, Ralph W. Newton, Jr., Harriet West Nielson, Alberta W. Parker, William O. Reinhardt, Edward S. Rogers, Frederick Sherwood, Richard S. Yocum, David Van der Slice.

Riverside County: Magdalene H. Corr, Robert S. Westphal.

Sacramento County: Herbert Notkin.

San Bernardino County: Virgil M. Pinkley.

San Francisco County: Felix C. Mapa.

Santa Clara County: Kristian Johnson.

Santa Cruz County: Joseph A. McMullin.

Ventura County: Alexander Auger, Gwen McCullough.

Marin County: Cornwall Everman.

Santa Barbara County: Charles G. Baird.

(f) On motion duly made and seconded in each case, 20 applicants were granted a reduction of dues because of protracted illness or absence from practice in pursuit of postgraduate instruction. These were:

Alameda County: Max Lowell, Jack Stein, Roy P. Stoops.

San Diego County: Robert E. Austin, Bert Dannenberg, Harold L. Fisher.

San Francisco County: Robert E. Berner, Barnet E. Bonar, Patrick Butler, Leo Eloesser, Floyd J. Field, Frederick G. Gillick, Jesse Jacobsen, Hedda Kornfeld, Harold LeBlond, Neil McCloy, Maury Misrack, Leibert J. Sanders, Reagan South, Emily Woelz.

(g) Discussion was held on the need of aiding medical students and house officers to ascertain basic aspects of medical economics and it was regularly moved, seconded and voted that medical students and house officers be urged to form their own organizations for self-education in the principles of sound effective private practice, and that the A.M.A. be asked to take appropriate steps to encourage this activity.

3. Financial:

(a) A report of bank balances as of March 4, 1949, was received and ordered filed.

(b) A balance sheet as of February 28, 1949, was received and ordered filed.

(c) Reports of revenues and expenditures for February and for the eight months ended February 28, 1949, for the Association and for *California Medicine* were received and ordered filed.

(d) The Executive Secretary reported that to date \$126,707.50 had been received from members toward the A.M.A. 1949 assessment.

4. Public Relations of the American Medical Association:

Dr. John W. Cline appeared by invitation and discussed the program for participation by state medical associations in the nationwide public relations program of the A.M.A. He reported that Drs. M. L. Montgomery of San Francisco and R. O. Bullis of Los Angeles had been appointed members of the "Committee of 53" of the American Medical Association, the national group of state representatives to serve as liaison officers between the A.M.A. and the state associations in the national public relations campaign. Dr. Cline asked that these appointments be confirmed and that provision be made for holding meetings in the northern and southern areas for business and civic leaders, to advise them on the aims of the A.M.A. program.

On motion duly made and seconded, the appointments of Drs. Montgomery and Bullis on the A.M.A. committee were confirmed.

On motion duly made and seconded, it was voted to hold meetings in the northern and southern areas to acquaint business and civic leaders with the objectives of the campaign. A chairman for this purpose is to be appointed by the Executive Committee. (Dr. Ben Frees of Los Angeles was appointed by the Executive Committee.)

5. Industrial Medical and Surgical Fees:

(a) Dr. Donald Cass, chairman of the Committee on Industrial Practice, discussed the status of the Association's proposed schedule of fees for industrial medicine and surgery and pointed out that the Industrial Accident Commission had tabled the Association's petition for adoption of a new fee schedule and had announced its intention of honoring the 1946 fee schedule only until June 30, 1949. Dr. Cass also stated that some industrial insurance companies had decided that the 1946 fees should apply in all cases and that the Association's recommendation to its members that the proposed 1949 fee schedule be put into effect February 1, 1949, had been offset by the decision of the insurance carriers to honor only the earlier schedule. He suggested that a committee might be appointed to meet with a committee proposed by the insurance carriers with a view toward securing full adoption of the Association's new schedule of fees.

On motion duly made and seconded, it was voted that a committee be appointed to meet with a committee representing the insurance carriers, to attempt to secure full adoption of the Association's fee schedule, the committee to consist of Dr. Cass as chairman, Drs. Carl Hoag, Ross Harbaugh and Charles O. Bechtol from the northern area and Drs. George Jones, Carl Johnson and John Gillis from the Los Angeles area.

On motion duly made and seconded, it was voted that a letter be sent to all members of the Association, outlining the status of the new fee schedule, suggesting that members continue to bill for industrial cases on the basis of the new schedule but that members be permitted, if they so wish, to accept up until June 30, 1949, payment from insurance carriers on the basis of the 1946 schedule.

(b) Dr. Cass presented to the Council a manual prepared by a committee under the chairmanship of Dr. Packard Thurber, dealing with proposed standardization of joint function measurement. On motion duly made and seconded, it was voted that the Council accept this manual and commend Dr. Thurber and his associates for their work.

6. Legal Department:

(a) Mr. Hassard presented a request from a member, inquiring into the consideration of ethics where physicians serve as limited partners in a pathological laboratory operated by or with a licensed laboratory technologist as the sole general partner and where profits are distributed on the

basis of ownership and not for work directed to the laboratory. A special committee was named to draft a reply to this question and reported (Sunday, March 6, 1949) its decision, which held that such a partnership must be construed as in violation of the principles of medical ethics in that it would constitute the rendering of services in conjunction with and for the profit of a layman. A reply along these lines was submitted and approved.

(b) Mr. Hassard reported that the Association of California Hospitals was considering the formation of a cooperative insurance company to issue professional liability insurance for hospitals and was inquiring into the desirability of including in such insurance surgeons operating in the hospitals. It was regularly moved, seconded and voted that the hospital association be notified that the California Medical Association does not recommend the inclusion of physicians in such a proposed hospital policy.

(c) Mr. Hassard also reported that the California Supreme Court has not yet decided *Sinz v. Owens*, a case involving standards of practice applicable to general practitioners.

Recess:

At this point, 11:45 p.m., the Council recessed until 9:00 a.m., Sunday, March 6, 1949.

Reconvention:

The Council reconvened in Room 261, St. Francis Hotel, San Francisco, at 9:00 a.m., Sunday, March 6, 1949.

Roll Call:

On roll call, all those noted present March 5 were present. In addition, Councilor Anderson and Editor Wilbur were present.

Present by invitation were those listed March 5, with the exception of Dr. Donald Cass.

Present by invitation during a part of the meeting were Dr. Wilton L. Halverson, state director of public health; Dr. C. L. Cooley, secretary, Mr. William M. Bowman, executive director, and Mr. John McMahon, assistant director, of California Physicians' Service; Joseph Donovan, executive secretary of the Santa Clara County Medical Society, and Mr. Glenn O. Everman, director of a hospital fund-raising organization.

A quorum present and acting.

7. Memorial to Los Angeles Chamber of Commerce:

On motion by Cherry, seconded by Henderson, the Council voted unanimously to adopt a resolution commending the Los Angeles Chamber of Commerce for its constructive efforts in behalf of the extension of voluntary sickness insurance and in opposition to compulsory sickness insurance.

8. Council Appointments:

(a) On motion duly made and seconded, Dr. Edgar Wayburn was appointed a member of the

Editorial Board of *California Medicine* to fill the unexpired term of the late Lambert B. Coblenz.

(b) On motion duly made and seconded, Dr. Robert Dennis was appointed a member of the Committee on Scientific Work to fill the unexpired term of Dr. William Russell, who has moved from the state.

9. Tuberculosis Control Program:

(a) Dr. H. Gordon MacLean reported for a special committee appointed to study a proposed tuberculosis control program; copies of the committee report had previously been distributed. Several additions and amendments were offered and approved and the amended report, on motion duly made and seconded, was approved.

(b) Discussion was held on the part to be played by county medical societies in cooperating with state and federal authorities in conducting mass chest surveys and it was agreed that the county societies should be fully represented on the operating committees conducting these surveys.

10. Other Organizations:

(a) Discussion was held on the existence of the increasing number of so-called "health and medical associations" and it was pointed out that certain of these were operated by laymen, did not come under the purview of the state insurance commissioner and did not offer a free choice of physicians to subscribing members. Legal counsel pointed out that any physician who contracts with such organizations might be held guilty of violating provisions of the medical practice act, as well as the principles of medical ethics. It was reported that a bill now before the state Legislature would provide for the control of such organizations by the insurance commissioner. On motion duly made and seconded, it was voted that the Association lend its support to this legislation and notify its members, through letters to county society secretaries and an editorial in the journal, of the dangers inherent in closed panel proprietary organizations.

(b) Dr. Hoffman reported on his meeting with the California Ambulance Association, paid tribute to the motives followed by this new organization in formulating standards of service and noted the desire of the ambulance operators to make their services conform with the wishes of physicians. The association at its meeting adopted a resolution in opposition to the establishment of a system of compulsory sickness insurance and instructed its attorneys to work for the defeat of state legislative bills toward this end.

11. California Physicians' Service:

Dr. C. L. Cooley, secretary of California Physicians' Service, reported that a new C.P.S. fee schedule was about ready for adoption, that physician membership in C.P.S. is now about 9,600, and that the board of trustees is considering the advisability of changing the income ceiling for service coverage

to a gross family income of \$4,000 annually instead of a net of \$3,000. Dr. Cooley also placed before the Council the possibility of financing a trip to Great Britain for a physician, an accountant and a writer who would review the practice of medicine in that country under the government socialized scheme and prepare a report for presentation to both professional and legislative bodies. There was discussion of this project and it was regularly moved and seconded that the Association provide financing for it. On vote, the motion was lost.

Mr. W. M. Bowman distributed copies of the C.P.S. financial report as of January 31, 1949, which showed a balance of \$930,768 in the unit stabilization fund reserve. As of February 28 this figure was tentatively calculated at more than \$1,000,000.

12. New Mexico Physicians' Service:

Mr. Hunton reported that executives of California Physicians' Service had reviewed the operations of New Mexico Physicians' Service in conformity with the request of the Council and had made numerous suggestions for improving the operating position of the organization. He also read a letter from Dr. John Conway, N.M.P.S. president, which stated that the financial position of N.M.P.S. was declining and that a proposal was under consideration to liquidate the organization and turn existing business over to a group of insurance carriers which would provide indemnification coverage, with a service type of coverage to members under an agreed-upon income ceiling at fees approved by the physicians. Such liquidation would produce between \$8,000 and \$10,000 for repayment of the funds advanced by the California Medical Association, with the possibility of additional funds for this purpose arising from the insurance companies' operations. Continuation of the present program would require additional financing. After full discussion it was regularly moved, seconded and voted that the C.M.A. state to N.M.P.S. its inability to advance further funds and to urge it to undertake the best available means of liquidation which would assure a continued service to the public and return the greatest possible credit to apply against loan funds advanced.

13. Appearance of Mr. Glenn O. Everman:

Mr. Everman appeared before the Council and urged that physicians take an active part in civic affairs, so that such ventures as privately endowed or erected hospitals might secure wide support.

14. C.M.A. Employees' Retirement Program:

Dr. Charnock, chairman of the Council committee on employee retirement, proposed that a formula be established for providing severance compensation to female employees leaving the Association for reasons acceptable to the Council. After discussion it was moved, seconded and voted to consider this proposal after further investigation.

15. Proposed Model Hospital Radiology Contract:

Mr. Hassard reviewed the situation since completion of the proposed model contract for hospitals and radiologists. On motion duly made and seconded, the Council voted to approve publication of the proposed contract, and to pursue efforts to make such a contract effective.

16. Special Committee on Alcoholism:

A report by the Council's special committee on alcoholism was presented and discussed. On motion duly made and seconded, it was voted to accept the report, order an abstract of it printed in the pre-convention issue of the journal and extend to Dr. Cullen Ward Irish, chairman, and the members of the committee the warm commendation of the Council for the production of an outstanding report. Dr. Murray reported that a bill now before the Legislature would create a bureau on alcoholism in the State Department of Public Health and provide an advisory committee on which the Association would be represented.

17. California Conference of Local Health Officers:

Drs. H. D. Chope and S. F. Farnsworth, health officers of San Mateo and Alameda counties, respectively, appeared before the Council, reported on the formation of this organization under terms of legislation adopted in 1947 and requested that a joint committee be established as liaison between the organization and the Council. On motion duly made and seconded, it was voted that a Council committee be named for this purpose, the chairman to make appointments.

18. Public Policy and Legislation:

Dr. Murray, Mr. Read and Mr. Hassard discussed several bills pending before the California Legislature and pointed out that 4,939 bills and resolutions have been introduced in this session, 452 of them having been found to have a bearing on the public health or the practice of medicine.

Mr. Read reported that the Hon. Jonathan J. Hollibaugh, Assemblyman from Huntington Park, has been active in stressing the financial aspects of proposed compulsory health insurance proposals in his current campaign to secure reduced expenditures and taxes. On motion duly made and seconded, it was voted to express to Mr. Hollibaugh the appreciation of the Council for his efforts in this direction.

19. Annual Session:

Discussion was held on the advisability of suggesting that the President of the Association be advised to discontinue the reception held prior to the annual President's Dinner. The problem of finding suitable space for, as well as defraying the cost of, this reception has risen greatly in recent years, and now seemed an undue financial burden on the President. On motion duly made and seconded, it was voted that this reception be cancelled as a feature of the annual session.

20. U. S. Navy Medical Officer Needs:

Report was made that the U. S. Navy has notified the Association that it needs 122 additional medical officers in the California area and requests the continued cooperation of the Association in securing these physicians. Such cooperation has previously been voted.

21. World Medical Association:

A request from the World Medical Association for the C.M.A. to become a member through the payment of a \$2,000 fee was read and discussed. On motion duly made and seconded, it was voted to defer action on this request at this time but to make provision for the distribution of World Medical Association literature at the annual session for the benefit of members who might wish to become individual members of W.M.A.

22. Nurse Recruitment:

A request for the Association to contribute \$2,500 toward a fund to be used in encouraging the registration of additional student nurses was discussed and it was regularly moved, seconded and voted to defer action pending information concerning conjunct contributions.

23. Practical Nurse Legislation:

A request for the Association to be represented at a meeting to discuss the several proposals now before the Legislature to establish a system of practical nurse registration and control over practical nurse training was discussed and it was regularly moved, seconded and voted to refer this matter to the Executive Committee for further consideration.

Time and Place of Next Meeting:

It was regularly moved, seconded and voted that the time and place of the next meeting be at the call of the chairman.

Adjournment: 6:10 p.m., Sunday, March 6, 1949.

In Memoriam

BONOFF, KARL MAX. Died in Los Angeles, May 11, 1949, aged 57, in an automobile accident. Graduate of the College of Physicians and Surgeons, Los Angeles, 1914. Licensed in California in 1914. Dr. Bonoff was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

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CHURCH, BURT THOMAS. Died in Los Angeles, March 12, 1949, aged 51. Graduate of the University of Nebraska College of Medicine, Omaha, 1923. Licensed in California in 1941. Dr. Church was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

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COTTE, CASSIUS CLAY. Died in Los Angeles, April 28, 1949, aged 84. Graduate of Rush Medical College, Chicago,

1889. Licensed in California in 1916. Dr. Cottle was a retired member of the Los Angeles County Medical Association, and the California Medical Association.



DECKER, CHARLES WILLIAM. Died in Pomona, March 25, 1949, aged 72. Graduate of the University of California School of Medicine, Los Angeles, 1906. Licensed in California in 1906. Dr. Decker was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.



DEPUY, CLARENCE AUGUSTUS. Died in Oakland, May 3, 1949, aged 77, of carcinoma of the prostate. Graduate of the College of Physicians and Surgeons of San Francisco, 1905. Licensed in California in 1906. Dr. DePuy was a retired member of the Alameda County Medical Association, and the California Medical Association.



FARNHAM, HARRIET JEAN BOWER. Died in Glendale, April 4, 1949, aged 50, of metastatic carcinoma. Graduate of the University of Minnesota Medical School, Minneapolis, 1923. Licensed in California in 1923. Dr. Farnham was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.



KOTLER, MORRIS JOHN. Died in San Diego, May 23, 1949, aged 49. Graduate of Washington University School of Medicine, St. Louis, 1928. Licensed in California in 1939. Dr. Kotler was a member of the San Diego County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.



MCCLINTOCK, GEORGE LORENZ. Died in San Diego, May 23, 1949, aged 55. Graduate of the University of Maryland

School of Medicine and College of Physicians and Surgeons, Baltimore, 1917. Licensed in California in 1936. Dr. McClintock was a member of the San Diego County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.



NELSON, CHARLES ROBERT. Died in Oakland, February 27, 1949, aged 78. Graduate of the University of Pittsburgh School of Medicine, 1895. Licensed in California in 1895. Dr. Nelson was a member of the Alameda County Medical Association, the California Medical Association, and the American Medical Association.



QUINN, WILLIAM JAMES. Died in Eureka, April 13, 1949, aged 72, of a heart attack. Graduate of the Cooper Medical College, 1905. Licensed in California in 1905. Dr. Quinn was a member of the Humboldt County Medical Society, a Life member of the California Medical Association, and a Fellow of the American Medical Association.



SMYTHE, HUDSON. Died in Stockton, May 13, 1949, aged 73, of a heart attack. Graduate of the University of California Medical School, Berkeley-San Francisco, 1901. Licensed in California in 1901. Dr. Smythe was a member of the San Joaquin County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.



VALLEE, JOHN EDWARD. Died in Los Angeles, February 13, 1949, aged 78. Graduate of the University of Vermont College of Medicine, Burlington, 1903. Licensed in California in 1917. Dr. Vallee was a retired member of the Los Angeles County Medical Association, and the California Medical Association.



NEWS and NOTES

NATIONAL • STATE • COUNTY

LOS ANGELES

Announcement of awards of fellowships for research in heart disease to two Los Angeles physicians was made recently by the Life Insurance Medical Research Fund. One of the fellowships went to **Dr. John Leyden Webb**, who will conduct a research project at the University of Zurich, Switzerland, and the other to **Dr. Howard Goodman** for work to be carried out at Cedars of Lebanon Hospital under the supervision of Dr. Thomas Addis and Dr. Jessie Marmorston. Awards from the fund, which is contributed to by life insurance companies of the United States and Canada, will total \$680,000 this year for support of research in heart disease.

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A \$7,200 grant for research at the University of California at Los Angeles school of medicine has been awarded by the American Cancer Society to **Dr. Abraham White**, chairman of the department of physiological chemistry, according to a recent announcement by Dr. Stafford Warren, dean of the medical school.

Dr. White's research will be concerned with the biochemistry of the lymphocyte. Much of this study will be devoted to the determination of the nature, quantity and functions of the various constituents of normal and malignant lymphocytes, as an approach to an understanding of one type of leukemia.

SAN FRANCISCO

A number of faculty changes have been announced by the Stanford University School of Medicine. On September 1, 1949, the following professors will retire from their active teaching duties with the title emeritus: Dr. George D. Barnett, professor of medicine; Dr. Charles H. Danforth, professor and executive of the department of anatomy; Dr. James R. Dillon, clinical professor and chief of the division of urology; Dr. Harold K. Faber, professor and executive of the department of pediatrics; Dr. Frank W. Weymouth, professor and executive of the department of physiology.

Dr. Charles E. Smith, professor and executive of the department of public health and preventive medicine, has resigned from the faculty of Stanford Medical School effective September 1, 1949. Dr. Smith has accepted an appointment in the Graduate School of Public Health at the University of California in Berkeley.

The following new appointments and promotions were announced:

Dr. John A. Anderson as professor and executive of the department of pediatrics. Dr. Anderson has been professor of pediatrics and executive of that department at the University of Utah for the past five years.

Dr. Henry Weyrauch, clinical professor and chief of the division of urology. Dr. Weyrauch has been a member of the faculty of the University of California School of Medicine since 1937.

Dr. J. K. Lewis has been promoted to professor of medicine and will succeed Dr. George D. Barnett on the Stanford service at the San Francisco Hospital.

Dr. William W. Greulich will succeed Dr. Charles H. Danforth as executive of the department of anatomy.

Dr. Rodney R. Beard has been promoted to professor of public health and preventive medicine and will succeed Dr. Charles E. Smith as executive of that department.

Dr. Jefferson Crismon, associate professor of physiology, has been appointed acting executive of the department of physiology.

In addition to department heads and division chiefs, several other appointments have been made, effective September 1, 1949:

Dr. Robert H. Alway as associate professor of pediatrics. Dr. Alway has been a member of the faculty of the University of Utah School of Medicine for the past four years.

Dr. Lyman M. Stowe, now at Yale School of Medicine, as assistant professor of obstetrics and gynecology.

Dr. George W. Henry as instructor in radiology.

The following promotions become effective September 1, 1949:

Dr. Hadley Kirkman and Dr. Donald James Gray have each been promoted to professor of anatomy, and Dr. Robert S. Turner to associate professor of anatomy.

Dr. Donald E. King has been promoted to professor of surgery (bone and joint surgery).

Dr. Robert H. Dreisbach has been promoted to associate professor of pharmacology.

Dr. Robert S. Evans has been promoted to associate professor of medicine in charge of clinical pathology.

SAN MATEO

Dr. Carl L. Hoag of San Mateo was reelected president of the San Mateo County Blood Bank at the annual meeting of that organization held late in April. U. S. Simonds, Jr., mayor of Burlingame, was reelected vice-president, and Mrs. P. J. Hanzlik secretary-treasurer. Dr. Hoag reported at the meeting that more blood was drawn and processed during the past year than in any other year since the bank has been in operation, including the war years. A total of 1,906 donors gave 3,633 pints of blood during the 12-month period, Dr. Hoag said.

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Dr. James M. Bodie, who for the past three years has been a member of the resident staff at the San Mateo County Hospital, has been appointed assistant medical superintendent of Canyon Sanatorium by Dr. Harold D. Chope, county health director.

SHASTA

Dr. Thomas D. Wyatt recently was named Shasta County physician and health officer and supervisor of the county hospital for a period of one year under an oral agreement with the county board of supervisors. He takes the place of Dr. B. F. Saylor. The board of supervisors by a 3 to 2 vote rejected a plan offered by the Shasta County Medical Society under which society members would rotate in treating patients at the county hospital under a county resident physician approved by the society.

SOLANO

Dr. Richard Golton, formerly of Berkeley, last month was appointed medical director of the Solano County Hospital at Fairfield to take the place of Dr. J. N. Clark. At the time the county board of supervisors named Dr. Francis DeBon, also of Berkeley, assistant medical director.

GENERAL

Plans to ask Army **reserve medical officers** to volunteer for short periods of duty each month at stations near their homes were announced last month by Major General Raymond W. Bliss as part of a program to relieve a medical staff shortage. General Bliss said that 14,300 physicians and 5,548 dentists on reserve status would be asked to serve for one to 29 days a month.

Meanwhile, Secretary of Defense Louis Johnson, who said that California has been assigned a quota of 305 physicians and dentists in the campaign to augment the armed services staff, reiterated an appeal to those who were given deferment from wartime service to complete their education, as well as those who received all or part of their education under government auspices, to volunteer now for active duty. Johnson said that many of the professional men in this category who have not served in the armed forces have replied negatively to a previous appeal.

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The American Congress of Physical Medicine will hold its 27th annual scientific and clinical session September 6, 7, 8, 9 and 10, 1949 inclusive, at the Netherlands Plaza Hotel, Cincinnati. All sessions will be open to members of the medical profession in good standing with the American Medical Association. Full information may be obtained by writing to the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.

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Public health officers to serve in civilian capacity with the **occupation forces in Japan** are urgently needed, according to announcement by the Department of the Army. Mini-

mum qualification requirements are a degree in medicine plus one year of internship. Experience in public health work is not mandatory. Salary for the positions is \$6,235.20 a year plus 10 per cent post differential with quarters provided at no extra cost to the employee. Appointees must agree to remain in Japan at least two years, but dependents may join the employee in about six to eight months after his arrival in the command, the announcement said.

Further information may be obtained from the Department of the Army, Overseas Affairs Branch, Civilian Personnel Division, Washington 25, D. C.

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Bringing to 13 the total number of **hospital construction projects** approved for funds available during the present fiscal year under terms of the Hospital Survey and Construction Act, the Hospital Advisory Council of the California Department of Public Health has given approval to four new district hospital proposals: Merced County Hospital; West View Hospital (Los Angeles); Marin County Hospital District; Biggs-Gridley Memorial Hospital (Gridley).

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Dr. Walter T. Harrison, who for the past seven years has been director of the U. S. Public Health Service for the West Coast area, with headquarters in San Francisco, will retire July 1, 1949. Dr. Harrison, who entered the U.S.P.H.S. in 1916, now is on terminal leave and **Dr. Henry C. Schumacher** is serving as acting health director for the area until a successor is appointed.

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The board of trustees of the **National Physicians Committee for the Extension of Medical Service**, formed ten years ago to function in fields in which the American Medical Association did not then operate, recently issued formal announcement that it ceased all activities as of April 1, 1949, and would dissolve the organization. This action was taken, the announcement said, in view of the fact that the A.M.A. has set up an agency of its own to carry on public relations activities and to further the extension of medical care.



INFORMATION

Licensure of Foreign Medical Graduates*

The licensure of physicians who have received their medical degrees from foreign institutions seems certain to present a growing problem for the licensing bodies of the forty-eight states, the District of Columbia and the territories and outlying possessions of the United States, and for the National Board of Medical Examiners. The unsettled economic and political conditions in many parts of the world have already stimulated many physicians to migrate to the United States and it may be predicted that the number seeking to migrate will increase in the years ahead. In addition, each year a number of Americans enter foreign medical schools with the expectation of returning to the United States to practice. Some of these students study abroad because they are unable to gain admission to an American medical college, while others do so from choice.

The problem of the physician who has graduated from a foreign medical school promises to confront the public, various legislative bodies and the licensing boards with increasing frequency during the next several years. The problem has important and far reaching implications for the health and safety of the people of the United States. It is important, therefore, that the public be provided with information to serve as the basis for intelligent opinion and that legislative and licensing bodies be prepared to adopt an enlightened policy in deciding questions pertaining to the licensure of foreign-trained physicians.

Two basic principles are involved in the licensure of physicians whether they be graduates of domestic or foreign schools. The first principle and one that has long been recognized by all states and nations is the requirement that a physician satisfy a licensing body representing the public as to his competence before he is permitted to practice. This principle is essential for the protection of the public. Without this requirement, the people of a community cannot distinguish those physicians who are competent to provide medical care from those who are not.

Similar requirements for licensure or equivalent certification by an appropriate public agency have been established for the protection of the people in many professional and non-professional occupations. Such occupations include architects, dentists, engineers, veterinarians, lawyers, nurses, electricians and plumbers. The principle of licensure by legally created agencies of the state has become so well established in our society that its value and validity cannot be questioned.

The second principle involved is that the training a man has undergone in preparing to enter a pro-

fession is a paramount factor in determining the quality of his professional practice. It must be admitted that exceptional men may rise above the limits of their training, but this achievement is frequently accomplished only after years of experience in practice and additional training. To allow an inadequately trained physician to attempt to perfect himself through the mistakes of years of practice is to permit unwarranted and unnecessary abuse of patients who entrust their health and lives to him.

An important corollary of this second principle is that the best assurance of the quality of the training that a physician has received is an intimate knowledge of the faculty, facilities, curriculum and standards of the medical school from which he has graduated. The art and science of conducting examinations has not yet advanced to the point where full reliance can be placed on the results of the type of examinations to which licensing boards are limited by considerations of practicality. Only when the results of such examinations are coupled with an evaluation of the quality of training that a physician has received can a licensing board be reasonably confident that a physician is adequately prepared to assume the responsibilities that are an inevitable part of his practice.

In licensing graduates of American and Canadian schools, the various state licensing boards have for many years had the benefit of the findings of periodic thorough surveys of these schools carried out by the two accrediting bodies, the Council on Medical Education and Hospitals of the American Medical Association and the Association of American Medical Colleges. Some of the state licensing boards supplement this information with investigations of their own although it is beyond the resources of most boards to inspect periodically all the eighty medical schools in the United States and Canada.

It should be pointed out that the present high standards of medical practice in the United States have been the direct result of the recognition by the licensing boards that evaluation of the school from which a physician graduates is equally important as evaluation of the physician himself. Before this principle was generally recognized, the country was overrun with physicians who, armed with a degree from a low-grade school or outright diploma mill, succeeded in one way or another in passing the examinations for licensure. The needless suffering and injury perpetrated by the incompetent and at times fraudulent practices of many of these inadequately trained men constitute a dark chapter in the history of medicine.

While it has been possible for the two accrediting agencies referred to above to maintain current appraisals of the quality of education offered by American and Canadian medical schools, it has been

*Prepared by the Committee on Foreign Medical Credentials, an unofficial body sponsored by the Council on Medical Education and Hospitals of the American Medical Association.

beyond their resources to attempt to maintain a similar inventory of the three hundred or more medical schools in other parts of the world. For many years this was not important because the number of physicians migrating to the United States was small and most foreign trained physicians came from medical schools that were well known in America.

Between 1930 and 1939 two developments occurred that entirely changed the situation. Unsettled and unfavorable conditions abroad prompted large numbers of physicians to migrate to this country. At the same time, internal developments in many countries led to a rapid deterioration in the quality of medical education. This change, which was readily apparent to American physicians travelling abroad in the years immediately prior to the war, was greatly accelerated when these countries became involved in World War II. The pressures of the war reduced the quality of medical education in all countries, including the United States, but in many countries the effect was catastrophic. Faculties were decimated, buildings, libraries and equipment were destroyed or badly damaged, all contact with scientific developments in other countries was interrupted and standards were lowered in an effort to turn out large numbers of physicians to serve the armies of the warring nations. By the end of the war, medical education in other countries, with few exceptions, had degenerated to a degree that was shocking to those who had known these countries in the period up to 1930. While medical education in the United States recovered quickly from the war and is now at the highest point in its development, unsettled political and economic conditions in many foreign countries have prevented any similar recovery. Even more disturbing is the fact that some foreign countries appear to be committed to educational policies that are so unsound and so inferior that there is serious doubt that satisfactory standards of medical education will be reestablished at any time in the foreseeable future.

It is against this background that the problem of the foreign trained physicians must be studied. Their complete exclusion from the United States cannot be reconciled with the traditional role of this country as the land of opportunity. The fact that few foreign countries will admit the graduates of American medical schools to practice should not be accepted as a valid reason for pursuing a reciprocal policy. It is well, however, for the people to know that the United States is the most liberal of all countries in licensing physicians who have not graduated from their own schools.

While a policy of complete exclusion cannot be defended, it is clear that until more information can be obtained about the present quality of medical schools abroad, the licensing boards would fail in their responsibility to the public if they did not use the greatest care and discretion in admitting foreign-trained physicians to their examinations.

Detailed current knowledge of foreign medical schools is indispensable for the guidance of state

licensing boards in determining which foreign physicians have had sound training. It is essential that the various agencies concerned with this problem unite their resources and devise a satisfactory method for securing this information at the earliest possible date. It will not be an easy task and it is improbable that well documented evaluations can be made of all foreign schools in the same manner as is done for American and Canadian schools. The geographic and physical aspects of the problem alone present great difficulties. International relations will undoubtedly also limit the extent to which a study can be carried out. One of the greatest difficulties will be to appraise accurately the great changes and fluctuations through which many schools have passed and are continuing to pass.

From such a study, however, it should be possible to derive a list of foreign medical schools which have maintained during specific periods, or are now maintaining, educational programs sufficiently comparable to the training offered by the medical schools of this country to warrant the admission of their graduates to the examinations of the licensing boards of the forty-eight states, the District of Columbia and the territories and outlying possessions of the United States as well as the examinations of the National Board of Medical Examiners.

As an added safeguard it would seem entirely reasonable that whenever a candidate cannot present evidence to a state licensing board that he is sufficiently familiar with recent scientific advances in medicine, with the practices and customs of American medicine, and with the English language, that he be required to take additional training in this country before being permitted to appear for examination. There is every reason to believe that the various licensing boards can develop regulations covering these points that will be fair to the foreign graduate and adequate to protect the public.

The American people are today well served by the licensing boards which they have duly constituted by law to protect them from incompetent practitioners of the healing arts. It is to be hoped that the people will continue to have the confidence that these licensing bodies are acting for their best interests according to well established principles.

The licensing bodies and the governments to which they are responsible have a heavy obligation to continue their efforts to maintain high standards of medical practice. They must also recognize that the spirit and tradition of America places upon them an obligation not to deny the opportunity to practice his profession to any citizen or prospective citizen who can demonstrate satisfactory qualifications as to his professional competence and character.

If the problem of the foreign medical graduate is approached in this spirit, the Committee on Foreign Medical Credentials is confident that it will be solved without lowering the standards of American medicine and in a manner consistent with our national ideals of justice and humanitarianism.

BOOK REVIEWS

THE CHILD IN HEALTH AND DISEASE—A Textbook for Students and Practitioners of Medicine. By Clifford G. Grulee, M.D., Rush Professor of Pediatrics, University of Illinois, Chief Editor, American Journal of Diseases of Children; and R. Cannon Eley, M.D., Associate in Pediatrics and Communicable Diseases, Harvard University Medical School. The Williams and Wilkins Company, Baltimore, Md., 1948. \$12.00.

When a new text in a field as broad as that of pediatrics appears, the potential purchaser asks what it has to offer that is not to be found in other current texts and the reviewer asks himself what is the purpose for which this potential purchaser purchases his reference books. In general, this purpose is to supply him with information not hitherto available to him from his own experience or from his personal library and journals. Such desired information is often in the domain of unusual diseases, of recent additions to medical knowledge relevant to his practice, especially diagnostic procedures and therapy. A prime requisite for any reference volume is a thoroughly adequate index.

There are now two American one-volume pediatric texts of outstanding merit: the Holt-McIntosh "Holt's Diseases of Infancy and Childhood," eleventh revised edition; and the Mitchell-Nelson "Textbook of Pediatrics," fourth edition revised. The former, published in 1940, and now understood to be in the process of revision, is in some respects out of date but in the opinion of the reviewer remains, more than any other, the ideal text regarding the requirements above noted, with the Mitchell-Nelson, dated 1945, a fairly close second. Both have adequate indexes. The present volume edited by Grulee and Eley is of about the same size and invites comparison with the other two. It is actually composed of units written by 75 different authors (only five from the Pacific coast), as compared with 35 in the Holt-McIntosh and 49 in the Mitchell-Nelson. With so various a composition, the merit of individual chapters is bound to vary greatly, but on the whole the quality of the contributors and of their contributions does not compare too favorably with that of the other two texts. Among those which are of special value are: Physical Growth and Development, by J. A. Johnston; Pediatric Pathology, by Sidney Farber; Vitamins and Avitaminosis by Drake and Tisdall; The Normal Newborn, by Clifford and Berenberg; Meningococcal Meningitis, by Hoyne; Poliomyelitis, by Wilson; Immunization Procedures, by Shaw; Streptococcal Infections, by Boisvert, Powers and Dunphy; Allergy and Eczema by Bratner and by Hill; Poisoning, by Aikman, Eley and others; First Aid, by Harrison; Pediatric Techniques, by Grulee, Jr., and Birdsong; and Juvenile Diabetes, by Priscilla White. The sections on Adolescence by Beverly and others, and on Pediatric Surgery by Coe will also be found useful.

It is when one attempts to look up specific subjects that the defects of the present volume and the inadequacy of the index becomes noticeable. For instance, retrolental fibroplasia—a form of blindness occurring in premature infants, which has attracted much attention during the last five years—is not to be found in the index, and is only briefly and inadequately mentioned in the section on the eye. Epidemic diarrhea of the newborn, a disease of major importance in pediatrics, is the subject of two brief descriptions. Despite the demonstration by at least two groups of workers of a virus in the stools in this disease, virus etiology is not mentioned and the cause is stated "most often" to be the hemolytic streptococcus, a view which is contrary to that now generally accepted. The life-saving measures described by Darrow and his associates are not mentioned; indeed,

the whole subject of fluid and electrolytic replacement is poorly covered. The physician wishing to learn and apply proper therapy would find no help here; this is particularly strange in the case of a work specifically intended, according to the preface, for the practicing pediatrician. According to the index, the only mention of electrocardiography is in relation to diphtheria. The section on coccidioidomycosis, written by an Illinois physician, ends with a statement (based on irrelevant guinea-pig experiments) that the sputum is infectious and that isolation of patients should be like that of patients with tuberculosis. This view is not correct according to Smith and his associates, who have had the largest personal experience with the disease.

In view of the widespread interest in congenital anomalies of the heart and great vessels, it is strange to find that the section on this subject, written by Gibson of Chicago, does not mention the operative procedure devised by himself and Potts, which has now been used in many cases and particularly at ages earlier than the period when the Blalock-Taussig procedure can be done to best advantage; nor is there mention of Gross's valuable procedure for the relief of tracheoesophageal constriction by double aorta and related anomalies. Moreover, Gibson's statement that in congenital cardiac anomalies, an "exact anatomical diagnosis is rarely possible" does not correctly represent the status of modern knowledge in the light of angiocardiology (which is not mentioned), right heart catheterization, and other aids, all of which render a fairly exact diagnosis decidedly possible in a great many instances, and are of the greatest value in assessing the indications for operation.

The section on stomatitis does not mention herpes virus, which has been found by at least three independent groups of workers to be the cause of the acute gingivostomatitis usually ascribed erroneously to the Plaut-Vincent organism. In the case of another characteristically pediatric disease, acroynia, no mention is made of recent observations that it may be due to mercury poisoning (usually calomel) and that it has been successfully treated with BAL. In the section on cerebral palsies the important factor of prenatal injury, especially from placental separation and toxemia, is not mentioned. The treatment of subdural hematoma, so ably described by Ingraham several years ago, is not only cursorily but actually dangerously dealt with, since it is stated that "immediate evacuation" is the correct treatment, whereas Ingraham emphasizes the importance of preliminary day-by-day gradual withdrawal of blood to avoid the hazards of sudden decompression. The section on endocrines leaves much to be desired; thus, in the discussion of precocious puberty, it is stated that the usual cause is tumor of the adrenal gland, whereas this is true only of the male; the granulosa cell tumor of the ovary—which should always be looked for in females since it is malignant and requires early removal—is not mentioned. The discussion of premature closure of the cranial sutures is quite inadequate and the operation which gives protection against and relief from the important complications of blindness and intracranial hypertension is not mentioned.

It is, of course, impossible for a reviewer to read through completely such a volume as this, but from the samplings mentioned it seems to be a fair judgment that this new pediatric text leaves much to be desired, and that the practicing pediatrician depending on it alone will not find in it much of the information needed in the care of his patients. On the other hand, there can be no question that if he already has other texts at hand, he may find a number of subjects better covered here than elsewhere.

HERNIA: Anatomy, Etiology, Symptoms, Diagnosis, Differential Diagnosis, Prognosis, and Treatment. By Leigh F. Watson, M.D., F.I.C.S. Third edition. Cloth. Price, \$13.50. Pp. 732, with 323 illustrations by Helen Lorraine, Willard C. Shepard and Ralph Sweet. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1948.

This book is an excellent treatise on the subject of hernia wherein the author admirably discusses all features such as the historical, embryological, anatomical, clinical and operative repair of the many different herniae found in the body. The medical drawings by Helen Lorraine, Willard C. Shepard and Ralph Sweet are as outstanding as those found in any surgical treatise. By means of these illustrations and succinct descriptions, the author takes the reader through the consecutive steps in the operative repair of hernia.

Why he devotes seventy pages to the injection treatment of hernia, a procedure which is of questionable or no value, is hard to say.

This book is highly recommended to all general surgeons, and to those who wish to have the aspect of all types of hernia presented in a single volume.

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BIOCHEMISTRY OF THE TEETH. By Henry M. Leicester, Ph.D., Professor of Biochemistry, College of Physicians and Surgeons, San Francisco. The C. V. Mosby Company, St. Louis, 1949. \$5.00.

This book is divided into eight informative chapters. The first chapter describes the chemical composition of the parts of the tooth, discusses variations in composition, and critically reviews the chemical methods. The basic apatite structure of tooth minerals is considered in detail, and earlier contradictions are resolved. In the second chapter, physical properties of teeth are discussed under headings of density, hardness, radiopacity, solubility, optical properties, fluorescences, electrical resistance and permeability. Chapter 3 describes the processes involved in the development of the tooth, including both histological and biochemical factors. Mineral metabolism and effects of diets and of ingestion of various substances, including fluorine, make up Chapter 4; Chapter 5 describes the effect of vitamins and Chapter 6 the effect of hormones on the developing tooth. Chapter 7 is devoted to a description of the dynamic chemical processes taking place in erupted teeth. The final chapter is devoted to the biochemical factors in caries formation. A critical appraisal is given of acid formation by *Lactobacillus acidophilus* and other organisms, plaque formation, saliva, general body metabolism, diet, vitamins, especially fluorine, activity of the protein matrix of the tooth, and still other factors in the production and control of caries.

The book is interestingly written and logically arranged; the author attempts to give opposing views on controversial points and to resolve the contradictions. Each chapter includes an extensive bibliography related to the subject matter of the chapter.

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EMERGENCIES IN MEDICAL PRACTICE. Edited by C. Allan Birch, M.D., F.R.C.P., Physician, Chase Farm Hospital, Enfield, 113 illustrations, 8 full color plates. The Williams and Wilkins Company, Baltimore, Maryland, 1948. \$7.00.

This is a well prepared collection of medical essays on medical emergencies which the author defines as a condition or circumstance of a patient which calls for immediate action other than surgery. It is quite elementary, though thorough, and would be a fine book for the young general practitioner or a man in emergency service. There are 18 contributors to this book, all well qualified men who have written separate chapters on specific emergencies in their field. Every type of emergency that can be thought of is included in this text and the treatment as recommended by

the authors is very good. It is all-inclusive from the emergencies in childhood to the making out of wills on the deathbed. It would be an excellent book for medical students to have on their shelves.

* * *

AN ELEMENTARY ATLAS OF CARDIOGRAPHY—An Introduction to Electrocardiography and X-Ray Examination of the Heart. By H. Wallace-Jones, M.D., Honorary Consulting Physician, Royal Liverpool United Hospital; E. Noble Chamberlain, M.D., Honorary Physician, Royal Liverpool United Hospital; and E. L. Rubin, M.D., Honorary Radiologist, Royal Liverpool United Hospital. Incorporating the Third Edition of *Electrocardiograms* with 100 illustrations. John Wright and Sons, Ltd., Bristol, 1948.

This book is a very elementary discussion of electrocardiography that scarcely warrants treatment in the form of a book. There is no discussion of the precordial leads. The discussion of each electrocardiographic pattern and arrhythmia is so brief as to merely "scratch the surface." In addition, there are some errors; for example on page 12, it is stated that the P-R interval corresponds with the time taken by the excitation wave to pass through the bundle of His. The authors state that the average QRS interval is 0.05 to 0.06 seconds, which are rather low figures.

The illustrations on bundle branch block imply that axis deviation is important in the diagnosis of left as compared to right bundle branch block and do not adequately discuss the modern opinion.

Other examples could be cited. In the discussion of Preponderance, the authors did not adequately differentiate left ventricular hypertrophy from left axis deviation.

The section on the Cardiac Radiology is far superior. The illustrations are excellent and the text is quite clear.

In general, the book may be recommended for its section on Radiology but other primers of Electrocardiography, such as that by Burch and Winsor, are far superior.

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DIABETIC MENUS, MEALS AND RECIPES. By Mrs. Betty M. West, with introduction by Russel F. Rypins, M.D. Doubleday and Company, Inc., New York, 1949. 254 pages. \$2.95.

Mrs. West in this volume has performed a real service to all diabetics. In her dual capacity as patient and housewife she has computed the food values of a large number of standard household recipes and indicated the carbohydrate, protein and fat values of suitable individual servings of the completed whole. She also illustrates how these servings may be included in completely planned meals. All the foods mentioned, the recipes and the planned meals, are equally suitable for other members of the family. The non-diabetic members may supplement these meals by extra servings, additional bread and even sugar if they choose. The preparation of special foods or meals for the patient alone can be easily avoided by following the author's suggestions. There are chapters on cocktails, soups, salads, meats and seafood, vegetables, breads, muffins and pastry, soybeans, sauces and salad dressings, egg recipes and desserts. There are also adequate chapters on the canning of all the major fruits and vegetables without sugar.

The diabetic world is divided into two approximately equal groups: those who follow the classic line of grouping fruits and vegetables into 5, 10, 15 and 20 per cent categories as to carbohydrate content, and the "Moderns" who subdivide these items into 3, 6, 9, 12 per cent and other groupings. Mrs. West belongs to the old school. For practical purposes it makes little real difference which system one uses and few patients will be confused regardless of their training and mathematical habits.

It is a pleasure to recommend this book to all diabetics and to those who advise and teach these patients.

CARDIOLOGY. By William Evans, M.D., Physician to the Cardiac Department of the London Hospital, Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, New York, N. Y., 1948. \$7.50.

This book, intended to occupy a place between that of a general medical text and exhaustive treatise on heart disease, will probably fail to fulfill the expectations of the average reader. Most aspects of heart disease are covered in sections based upon lectures given by the author to graduate students. Perhaps because of limitation of space but partly because of an overabundance of illustrations the text is in many cases too brief for an adequate discussion of important topics. It is difficult to find a straightforward discussion of how to give digitalis to the average patient with heart failure or of the use of a low-sodium diet, and the treatment of subacute bacterial endocarditis is covered in one short paragraph. Greater use of phonocardiograms is made than in most texts, but the introduction of unfamiliar terms instead of those in current use is confusing. The discussions concerned with x-ray examination of the heart are good and the reproduction of radiograms superb.

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THE VENEREAL DISEASES—A MANUAL FOR PRACTITIONERS AND STUDENTS. By James Marshall, M.D., B.S., Director, Venereal Diseases Clinic, Royal Northern Hospital, London. Second Edition. Macmillan and Co., 60 Fifth Ave., New York. 1948. \$5.50.


This 357-page "Manual for Practitioners and Students" is very well named, for it is just what the name suggests.

It is divided into four parts. Part one deals with the diagnosis and treatment of gonorrhea in the male and female. It includes an excellent description of the anatomy of both and the technique of a thorough examination for the detection of disease. The possible complications to be looked for with suggestions for their prevention is the subject of one chapter. A very comprehensive outline of treatment both pre- and post-penicillin is found in this section. Part two covers in an excellent manner practical information upon the diagnosis and treatment of early and late syphilis. Part three describes the other less common venereal diseases and certain so-called non-specific infections which must be differentiated from venereology. Part four gives practical instructions covering office technique in the treatment of gonorrhea, syphilis and the complications of each.

It is unfortunate that when the first edition of the book was revised, penicillin was apparently not readily available in England and therefore older forms of treatment for gonorrhea such as sulfa and fever therapy, instead of being placed in the chapter on history of treatment, were included as current methods.

This book would make a useful addition to the practitioner's library particularly because of its well illustrated chapters dealing with the diagnosis of venereal and allied diseases. The reader must keep in mind that this book was written by an Englishman and of necessity the British methods of treatment will not correspond entirely with our own.





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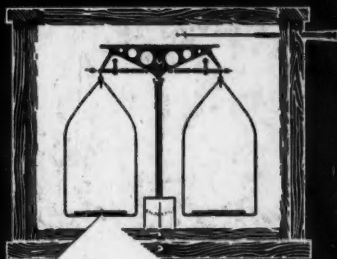
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